US Army Corps
of Engineers®
Walla Walla District

DRAFT

Lower Snake River Juvenile Salmon Migration Feasibility Report/ Environmental Impact Statement

APPENDIX K
Real Estate

December 1999

FEASIBILITY STUDY DOCUMENTATION

Document Title	
Summary to the Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement	
Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement	
Appendix A	Anadromous Fish
Appendix B	Resident Fish
Appendix C	Water Quality
Appendix D	Natural River Drawdown Engineering
Appendix E	Existing Systems and Major System Improvements Engineering
Appendix F	Hydrology/Hydraulics and Sedimentation
Appendix G	Hydroregulations
Appendix H	Fluvial Geomorphology
Appendix I	Economics
Appendix J	Plan Formulation and Decision Analysis Model
Appendix K	Real Estate
Appendix L	Lower Snake River Mitigation History and Status
Appendix M	Fish and Wildlife Coordination Act Report
Appendix N	Cultural Resources
Appendix O	Public Outreach Program
Appendix P	Air Quality
Appendix Q	Tribal Consultation/Coordination
Appendix R	Historical Perspectives
Appendix S	Snake River Maps
Appendix T	Biological Assessment
Appendix U	Clean Water Act, Section 404(b)(1) Evaluation

The documents listed above, as well as supporting technical reports and other study information, are available on our website at www.nww.usace.army.mil. Copies of these documents are also available for public review at various city, county, and regional libraries.

FOREWORD

This appendix is one part of the overall effort of the U.S. Army Corps of Engineers (Corps) to prepare the Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement (FR/EIS).

Please note that this document is a DRAFT appendix and is subject to change and/or revision based on information received through comments, hearings, workshops, etc. After the comment period ends and hearings conclude a Final FR/EIS with Appendices is planned.

The Corps has reached out to regional stakeholders (Federal agencies, tribes, states, local governmental entities, organizations, and individuals) during the development of the FR/EIS and appendices. This effort resulted in many of these regional stakeholders providing input, comments, and even drafting work products or portions of these documents. This regional input provided the Corps with an insight and perspective not found in previous processes. A great deal of this information was subsequently included in the Draft FR/EIS and Appendices, therefore, not all the opinions and/or findings herein may reflect the official policy or position of the Corps.

STUDY OVERVIEW

Purpose and Need

Between 1991 and 1997, due to declines in abundance, the National Marine Fisheries Service (NMFS) made the following listings of Snake River salmon or steelhead under the Endangered Species Act (ESA) as amended:

- sockeye salmon (listed as endangered in 1991)
- spring/summer chinook salmon (listed as threatened in 1992)
- fall chinook salmon (listed as threatened in 1992)
- steelhead (listed as threatened in 1997)

In 1995, NMFS issued a Biological Opinion on operations of the Federal Columbia River Power System. The Biological Opinion established measures to halt and reverse the declines of these listed species. This created the need to evaluate the feasibility, design, and engineering work for these measures.

The U.S. Army Corps of Engineers (Corps) implemented a study after NMFS's Biological Opinion in 1995 of alternatives associated with lower Snake River dams and reservoirs. This study was named the Lower Snake River Juvenile Salmon Migration Feasibility Study (Feasibility Study). The specific purpose and need of the Feasibility Study is to evaluate and screen structural alternatives that may increase survival of juvenile anadromous fish through the Lower Snake River Project (which includes the four lowermost dams operated by the Corps on the Snake River—Ice Harbor, Lower Monumental, Little Goose, and Lower Granite dams) and assist in their recovery.

Development of Alternatives

The Corps completed an interim report on the Feasibility Study in December 1996. The report evaluated the feasibility of drawdown to natural river levels, spillway crest, and other improvements to existing fish passage facilities. Based in part on a screening of actions conducted in the interim report, the study now focuses on four courses of action:

- Existing conditions (currently planned fish programs)
- System improvements with maximum collection and transport of juveniles (without major system improvements such as surface bypass collectors)
- System improvements with maximum collection and transport of juveniles (with major system improvements such as surface bypass collectors)
- Dam breaching or permanent drawdown to natural river levels for all reservoirs

The results of these evaluations are presented in the combined Feasibility Report (FR) and Environmental Impact Statement (EIS). The FR/EIS provides the support for recommendations that will be made regarding decisions on future actions on the Lower Snake River Project for passage of juvenile salmonids. This appendix is a part of the FR/EIS.

Geographic Scope

The geographic area covered by the FR/EIS generally encompasses the 140-mile long lower Snake River reach between Lewiston, Idaho and the Tri-Cities in Washington. The study area does slightly vary by resource area in the FR/EIS because the affected resources have widely varying spatial characteristics throughout the lower Snake River system. For example, socioeconomic effects of a permanent drawdown could be felt throughout the whole Columbia River Basin region with the most effects taking place in the counties of southwest Washington. In contrast, effects on vegetation along the reservoirs would be confined to much smaller areas.

Identification of Alternatives

Since 1995, numerous alternatives have been identified and evaluated. Over time, the alternatives have been assigned numbers and letters that serve as unique identifiers. However, different study groups have sometimes used slightly different numbering or lettering schemes and this has lead to some confusion when viewing all the work products prepared during this long period. The primary alternatives that are carried forward in the FR/EIS currently involve four major alternatives that were derived out of three major pathways. The four alternatives are:

Alternative Name	PATH[1/] Number	Corps Number	FR/EIS Number
Existing Conditions	A-1	A-1	1
Maximum Transport of Juvenile Salmon	A-2	A-2a	2
Major System Improvements	A-2’	A-2c	3
Dam Breaching	A-3	A-3a	4

[1/] Plan for Analyzing and Testing Hypotheses

Summary of Alternatives

The **Existing Conditions Alternative** consists of continuing the fish passage facilities and project operations that were in place or under development at the time this Feasibility Study was initiated. The existing programs and plans underway would continue. Project operations, including all ancillary facilities such as fish hatcheries and Habitat Management Units (HMUs) under the Lower Snake River Fish and Wildlife Compensation Plan (Comp Plan), recreation facilities, power generation, navigation, and irrigation would remain the same unless modified through future actions. Adult and juvenile fish passage facilities would continue to operate.

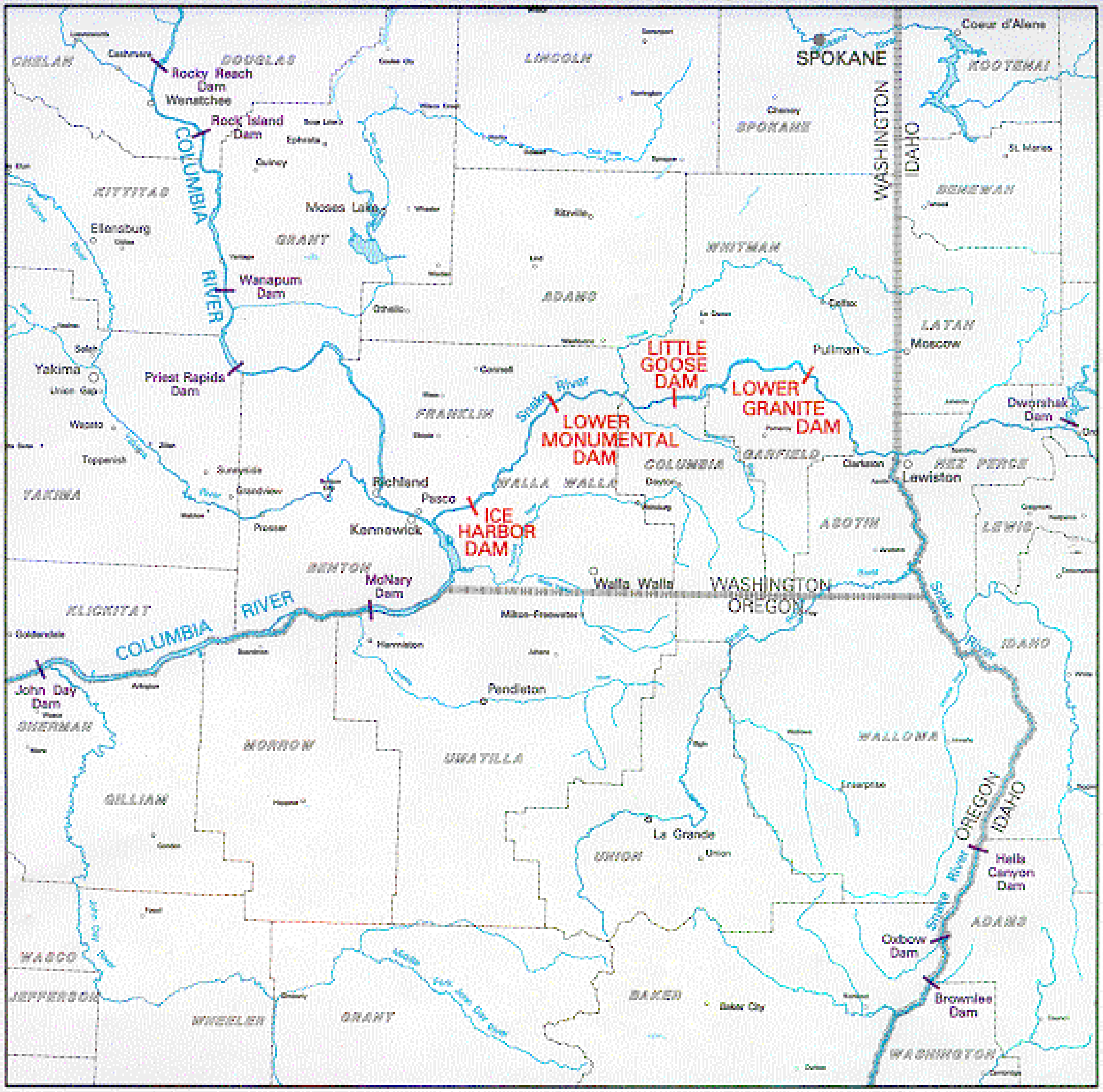
The **Maximum Transport of Juvenile Salmon Alternative** would include all of the existing or planned structural and operational configurations from the Existing Conditions Alternative. However, this alternative assumes that the juvenile fishway systems would be operated to maximize fish transport from Lower Granite, Little Goose, and Lower Monumental and that voluntary spill would not be used to bypass fish through the spillways (except at Ice Harbor). To accommodate this maximization of transport some measures would be taken to upgrade and improve fish handling facilities.

The **Major System Improvements Alternative** would provide additional improvements to what is considered under the Existing Conditions Alternative. These improvements would be focused on using surface bypass collection (SBC) facilities in conjunction with extended submersible bar screens (ESBS) and a behavioral guidance system (BGS). The intent of these facilities is to provide more effective diversion of juvenile fish away from the turbines. Under this alternative the number of fish collected and delivered to upgraded transportation facilities would be maximized at Lower Granite, the most upstream dam, where up to 90 percent of the fish would be collected and transported.

The **Dam Breaching Alternative** has been referred to as the "Drawdown Alternative" in many of the study groups since late 1996 and the resulting FR/EIS reports. These two terms essentially refer to the same set of actions. Because the term drawdown can refer to many types of drawdown, the term dam breaching was created to describe the action behind the alternative. The Dam Breaching Alternative would involve significant structural modifications at the four lower Snake River dams allowing the reservoirs to be drained and resulting in a free-flowing river that would remain unimpounded. Dam breaching would involve removing the earthen embankment sections of the four dams and then developing a channel around the powerhouses, spillways, and navigation locks. With dam breaching, the navigation locks would no longer be operational, and navigation for large commercial vessels would be eliminated. Some recreation facilities would close while others would be modified and new facilities could be built in the future. The operation and maintenance of fish hatcheries and HMUs would also change although the extent of change would probably be small and is not known at this time. Project development, design, and construction span a period of nine years. The first three to four years concentrate on the engineering and design processes. The embankments of the four dams are breached during two construction seasons at year 4-5 in the process. Construction work dealing with mitigation and restoration of various facilities adjacent to the reservoirs follows dam breaching for three to four years.

Authority

The four Corps dams of the lower Snake River were constructed and are operated and maintained under laws that may be grouped into three categories: 1) laws initially authorizing construction of the project, 2) laws specific to the project passed subsequent to construction, and 3) laws that generally apply to all Corps reservoirs.



BOUNDARIES

State

County

KM 300 100 0 MILES 7.5 15 30

125,000 ACRES

GEOGRAPHIC INFORMATION SYSTEMS
Corps of Engineers
Walla Walla District

1 : 1,900,800

DRAFT

Lower Snake River

Juvenile Salmon Migration Feasibility Study

REGIONAL BASE MAP

1999

GIS Analysis & Graphic Assembly: Applied Technology Team (CENWW-PM-PD-E-AT)
GIS Applications Coordination: Blaise Grden (CENWW-PM-PD-E-AT)
Study Manager: Blaise Grden (CENWW-PM-PD-E-AT)
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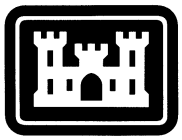
ABSTRACT

The Real Estate Appendix K was prepared by the Walla Walla District Corps of Engineers Real Estate Division. It describes government projects referenced in the study area and evaluates the impacts, from a real estate perspective, that could occur if dam breaching were authorized.



US Army Corps
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Draft
Lower Snake River Juvenile Salmon Migration Feasibility Report/ Environmental Impact Statement

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Appendix K
Real Estate

Prepared by
U.S. Army Corps of Engineers
Walla Walla District

Completed November 1999
Revised and released for review with
Draft FR/EIS
December 1999

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CONTENTS

TABLES

ACRONYMS AND ABBREVIATIONS

Corps	U.S. Army Corps of Engineers
EBS	Environmental Baseline Study
GSA	General Services Administration
HMU	Habitat Management Unit
NMFS	National Marine Fisheries Service
PPR	Public Park and Recreation

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Executive Summary

The Lower Snake River Project was authorized by the Rivers and Harbors Act of 1945 (Public law 79-14) on March 2, 1945, in accordance with House Document 704, 75th Congress, 3rd Session. That legislation enabled construction of the four lock and dam facilities that now create an inland waterway between Lewiston, Idaho and the Columbia-Snake River confluence near Pasco, Washington. The dams provide slackwater navigation, hydropower, recreation, and incidental irrigation.

Existing system and major system improvement alternatives are expected to have no change to baseline from a Real Estate perspective. Therefore, the primary focus of the Real Estate Analysis is to evaluate the natural river drawdown alternatives, and make recommendations based upon the decommissioning of the four lower Snake River dams. Alternative drawdown measures involving either dam retention or full facility removal would have negligible effects on the Government real estate for the purposes of the feasibility study. A summary of acreages for ;the four dam sites is shown in Table ES-1.

Although Corps-managed lands would no longer be required for commercial navigation or hydropower, a significant portion would be needed to meet other existing or newly authorized purposes. For example, significant acreage is leased to state and local governments and private entities for recreation and fish and wildlife management. It is expected that many of these lessees would choose to continue their operations under the same or modified arrangements. Additionally, the newly exposed lands would be needed to monitor the biological effectiveness of the drawdown.

Decommissioning or drawdown of the four reservoirs would create a 225.3-kilometer (140-mile) long river corridor, with an estimated 5,573.4 hectares (13,771.6 acres) of dewatered land. Through informal discussions at meetings with Federal, state and local agencies, it is felt that it would be prudent for the Corps to retain the responsibility to manage the lands until such time as it is determined that drawdown is permanent and recommissioning is no longer viable. In addition, restoration of the previously submerged lands would likely be needed, and it is anticipated that any decommissioning legislation would provide restoration funding. If reservoir drawdown is found to be biologically effective, it is assumed that the drawdown would become permanent and the lower Snake River dams deauthorized.

It is anticipated that public control of a significant portion of the project lands would be necessary to protect the environment and natural benefits to the salmon derived from reservoir drawdown. Should any lands no longer be required for the public benefit, they would be reported to the General Services Administration (GSA) for disposal. The GSA would screen these lands with other Federal agencies to determine whether other Federal requirements pertain to the property. If not, GSA would then dispose of the lands to other public or private entities or individuals.

Table ES-1. Acreages

	Ice Harbor	Lower Monumental	Little Goose	Lower Granite	Grand Totals
Current Acreage Based On Corps Acquisition or Excessing Actions					
Fee	6,717.1	10,210.9	10,227.3	11,707.5	
Public Domain	759.6	347.7	272.0	254.8	
Easement	440.8	28.4	0.5	66.0	
Riverbed	5,122.0	3,517.0	5,185.0	5,640.0	
License				0.1	
Permit				0.2	
Total	13,039.5	14,104.0	15,684.8	17,668.6	60,496.9
Acreage Based on Normal Operating Pool					
Normal Operating Pool (msl)	437 ft	540 ft	638 ft	738 ft	
Acreage Above	4,037.7	9,143.6	4,859.6	9,220.4	27,261.3
Acreage Below					
Riverbed	5,122.0	3,517.0	5,185.0	5,640.0	19,464.0
Land	3,879.8	1,443.4	5,640.2	2,808.2	13,771.6
SubTotal	9,001.8	4,960.4	10,825.2	8,448.2	33,235.6
Total	13,039.5	14,104.0	15,684.8	17,668.6	60,496.9

Source: Walla Walla District Real Estate Database

1. Introduction

On March 2, 1995, the National Marine Fisheries Service (NMFS) issued a Biological Opinion establishing hydrosystem measures needed for the survival of Snake River salmon stocks listed under the Endangered Species Act. As a result, the U.S. Army Corps of Engineers (Corps) has undertaken this feasibility study to evaluate certain initiatives that may increase the survival and recovery of juvenile salmon as they migrate through the four Corps-operated lock and dam systems on the lower Snake River. Proceeding upriver from its mouth, these include the Ice Harbor, Lower Monumental, Little Goose and Lower Granite facilities.

With technical assistance and input from a broad spectrum of regional participants, this study focuses upon four alternatives considered to offer opportunities for improving salmon migration. They include: 1) existing conditions, 2) maximum transport of juvenile fish, 3) major system improvements, and 4) dam breaching. Once a thorough examination of these alternative actions has been completed, final recommendations will be made as appropriate. Real estate involvement is not anticipated under the above mentioned alternatives 1, 2, and 3, as any programmatic or structural modifications will likely be confined to facility operational areas within Corps jurisdiction and not impact lessees or other grantees. Accordingly, this appendix will concentrate on alternative 4), dam breaching and the associated real estate ramifications that it might present.

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2. Historical Data

The Lower Snake River Project was authorized by the Rivers and Harbors Act of 1945 (Public Law 79-14) on March 2, 1945, in accordance with House Document 704, 75th Congress, 3rd Session. That legislation enabled construction of the four lock and dam facilities that now create an inland waterway between Lewiston, Idaho and the Columbia-Snake River confluence near Pasco, Washington. The dams were to provide slackwater navigation, hydropower, recreation, and incidental irrigation.

2.1 Ice Harbor Lock and Dam—Lake Sacajawea, WA

The first of the four-dam series to be constructed on the Lower Snake River Project, Ice Harbor Dam, is located 15.6 kilometers (9.7 miles) upstream of the Columbia-Snake River confluence and approximately 19.3± kilometers (12± miles) east of Pasco, Washington. Construction started in 1955, operation began in 1961 and the project was completed in 1971. Records indicate that Ice Harbor encompasses 5,277.1± hectares (13,039.5± acres), with 3,643.1± hectares (9,001.8± acres) lying below the normal operating pool elevation of 133.2 meters (437 feet), mean sea level. An accounting of land acquisition and disposal is tabulated in Table 2-1 below.

Table 2-1. Ice Harbor Land Acquisition and Disposal

Acreage	Acquired	Disposed	Current
Fee	8,354.3	1,637.2	6,717.1
Public Domain	837.9	78.3	759.6
Easement	485.9	45.1	440.8
Riverbed [1/]	5,122.0	0	5,122.0
Lease	7.7	7.7	
Total	14,807.8	1,768.3	13,039.5

1/ Drawing down the reservoirs will expose an estimated 5,573.4± hectares (13,771.6± acres) of currently inundated fee/public domain land that lie between the ordinary high water line of the original riverbed and the normal operating pools. The state-owned riverbed holds 7,877.1± hectares (19,464± acres) and was not acquired by the Government. Rather, it is utilized for facility purposes pursuant to navigational servitude.

Source: Walla Walla District Real Estate Database

2.2 Lower Monumental Lock and Dam—Lake Herbert G. West, WA

The second of the four-dam series, Lower Monumental Dam is located about 72.5± kilometers (45± miles) northeast of Pasco, Washington and 67 kilometers (41.6 miles) above the river mouth. Construction began in 1961, operation began in 1969 and the project was completed in 1976. Today, Lower Monumental encompasses 5,708± hectares (14,104± acres), of which 2,007.4± hectares (4,960.4± acres) lie below the normal operating pool elevation of 165 meters (540 feet), mean sea level. An accounting of land acquisition and disposal is tabulated in Table 2-2.

Table 2-2. Lower Monumental Land Acquisition and Disposal

Acreage	Acquired	Disposed	Current
Fee	12,427.0	2,216.1	10,210.9
Public Domain	363.5	15.8	347.7
Easement	55.9	27.5	28.4
Riverbed [1/]	3,517.0	0	3,517.0
Lease	2.2	2.2	0
Total	16,365.6	2,261.6	14,104.0

Source: Walla Walla District Real Estate Database

2.3 Little Goose Lock and Dam—Lake Bryan, WA

The third of the four-dam series, Little Goose Dam is about 64.4± kilometers (40± miles) north of Walla Walla, Washington and 113.1 kilometers (70.3 miles) above the river mouth. Construction started in 1963, operation began in 1970 and the project was completed in 1976. Little Goose encompasses 6,348± hectares (15,684.7± acres), of which 4,381± hectares (10,825.2± acres) lie below the normal operating pool elevation of 194.5 meters (638 feet), mean sea level. An accounting of land acquisition and disposal is tabulated in Table 2-3.

Table 2-3. Little Goose Land Acquisition and Disposal

Acreage	Acquired	Disposed	Current
Fee	12,347.5	2,120.2	10,227.3
Public Domain	353.7	81.7	272.0
Easement	.5	0	.5
Riverbed [1/]	5,185.0	0	5,185.0
Total	17,886.7	2,201.9	15,684.8

1/ Drawing down the reservoirs will expose an estimated 5,573.4± hectares (13,771.6± acres) of currently inundated fee/public domain land that lie between the ordinary high water line of the original riverbed and the normal operating pools. The state-owned riverbed holds 7,877.1± hectares (19,464± acres) and was not acquired by the Government. Rather, it is utilized for facility purposes pursuant to navigational servitude.

Source: Walla Walla District Real Estate Database

2.4 Lower Granite Lock and Dam, WA

The furthest upstream and last of the four-dam series, Lower Granite Dam is located about 53.1± kilometers (33± miles) downstream from Lewiston, Idaho at river mile 107.5. Construction started in 1965, operation began in 1975 and the project was completed in 1979. Lower Granite encompasses 7,150.5± hectares (17,668.6± acres), of which 3,418.9± hectares (8,448.2± acres) lie below the normal operating pool elevation of 225 meters (738 feet), mean sea level. An accounting of land acquisition and disposal is tabulated in Table 2-4. A summary of acreages for the four dam sites is shown in Table 2-5.

Table 2-4. Lower Granite Land Acquisition and Disposal

Acreage	Acquired	Disposed	Current
Fee	12,881.4	1,173.9	11,707.5
Public Domain	254.8	0	254.8
Easement	86.5	20.5	66.0
Riverbed	5,640.0	0	5,640.0
Lease	17.4	17.4	0
License	.1	0	.1
Permit	.2	0	.2
Total	18,880.4	1,211.8	17,668.6

1/ Drawing down the reservoirs will expose an estimated 5,573.4± hectares (13,771.6± acres) of currently inundated fee/public domain land that lie between the ordinary high water line of the original riverbed and the normal operating pools. The state-owned riverbed holds 7,877.6± hectares (19,464± acres) and was not acquired by the Government. Rather, it is utilized for facility purposes pursuant to navigational servitude.

Source: Walla Walla District Real Estate Database

2.5 Land Acquisition Costs

After subtracting past disposal actions, the following schedule (Table 2-6) reflects the net amount paid by the Government for those project land interests that are currently held. (Not included are any dollars that might have been attributed to Public Domain land value or to acquisition administration.)

Updating the values of all existing project land interests is not considered to be crucial to this study. (Given the age of each facility and the market changes that have occurred over the years, it is reasonable to assume that current values have *substantially* increased.) More relevant are the administrative costs to the Government associated with options for disposition of project real estate after implementing a reservoir drawdown. These costs will be developed and explained further in this Appendix.

Table 2-5. Acreage Summary

	Ice Harbor	Lower Monumental	Little Goose	Lower Granite	Grand Totals
Current Acreage Based On Corps Acquisition or Excessing Actions					
Fee	6,717.1	10,210.9	10,227.3	11,707.5	
Public Domain	759.6	347.7	272.0	254.8	
Easement	440.8	28.4	0.5	66.0	
Riverbed	5,122.0	3,517.0	5,185.0	5,640.0	
License				0.1	
Permit				0.2	
Total	13,039.5	14,104.0	15,684.8	17,668.6	60,496.9
Acreage Based on Normal Operating Pool					
Normal Operating Pool (msl)	437 ft	540 ft	638 ft	738 ft	
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Land	3,879.8	1,443.4	5,640.2	2,808.2	13,771.6
SubTotal	9,001.8	4,960.4	10,825.2	8,448.2	33,235.6
Total	13,039.5	14,104.0	15,684.8	17,668.6	60,496.9

Source: Walla Walla District Real Estate Database

Table 2-6. Balance—Original Costs of Remaining Land Interests

	$
Ice Harbor Lock & Dam	644,765
Lower Monumental Lock & Dam	3,512,109
Little Goose Lock & Dam	3,712,822
Lower Granite Lock & Dam	14,256,061
Total (1950s & 1960s dollars)	22,125,757

Source: Walla Walla District Real Estate Database

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3. Drawdown Measures

A drawdown to natural river conditions would require decommissioning the existing projects and a new authorization from Congress. Decommissioning would give rise to two options for the future of the four Lower Snake River facilities: full or partial dam removal.

3.1 Partial Dam Removal

This scenario assumes a permanent drawdown. The concrete portions of the dams would be retained and the embankment portion of the dam breached. Further use of the facilities for commercial navigation or hydropower would be impossible. While the drawdown engineering team has investigated the possibility of mothballing the remaining facilities, it was determined that it would not be economical to save the equipment within the concrete structures. Therefore, the dam and attending structures that remain would be abandoned in place.

3.2 Full Dam Removal

This option would involve complete removal of all facilities. The dams would be breached in the embankment sections, and the river would be diverted temporarily around the remaining dam structures until they were also removed. Removal of the dam structures would include: actions to dewater the demolition site, significant explosive and impact demolition, excavation, and transportation of equipment and waste materials to designated waste and storage areas. Although the study team concluded that leaving the concrete dam facilities in the river would be the major action selected for the implementation plan, the team did develop a concept for demolition and removal of the existing dam structures in Appendix D.

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4. Disposition of Lands Under Project Decommissioning

4.1 Land Disposition

Under project decommissioning, project lands would be retained to monitor and maintain the biological effectiveness of reservoir drawdown. Although project lands would no longer be required for commercial navigation or hydropower, a significant portion would arguably be needed to meet other existing or newly authorized purposes. For example, significant acreage is leased to state and local governments and private entities for recreation or fish and wildlife management. It is expected that many of these lessees will choose to continue their operations under the same or modified arrangements. It is also anticipated that public control of a significant portion of project lands will be necessary to protect the environmental and natural benefits to the salmon derived from reservoir drawdown. Restoration of previously submerged lands will likely be required. It is expected that any reauthorizing legislation would include provisions to meet the above concerns. Should any lands no longer be required, they would be reported to the General Services Administration (GSA) for disposal. GSA would screen the lands with other Federal agencies to determine whether there is another Federal requirement for the property. If not, GSA would then dispose of the lands to other eligible public or private entities or individuals.

4.2 Lands Previously Conveyed for Public Port and Industrial Purposes

Under the authority of Section 108 of Public Law 86-645, the Secretary of the Army has previously conveyed lands in fee to various port districts for operation of port and industrial facilities in connection with the four navigation facilities. The enabling legislation required that the lands be conveyed at fair market value. It further restricted the use to port and industrial purposes only. A drawdown to natural river conditions will in most cases make the use of the lands for these limited purposes impractical. Therefore, it is expected that any legislation implementing a reservoir drawdown will release the deed restrictions or otherwise address this potential inequity.

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5. Real Estate Actions

In order to fully appreciate the required real estate administrative actions (and costs) arising from drawing down the 225.3 kilometer (140-mile) reach of the lower Snake River, it is first necessary to provide a discussion of what these actions entail.

5.1 Grantee Notification

It will be necessary to provide written notification of the pending drawdown to all parties (grantees) who have been granted the right to utilize project real estate. They will be advised of the schedule and procedure for drawdown and given other information to help them assess likely impacts to the rights under their outgrants. They will also be furnished the address and telephone numbers of Real Estate Division personnel in order to direct any questions or concerns regarding possible impacts and alternatives. Currently there are an aggregate 291 outgrants, i.e., leases, permits, licenses, easements (including deed reservations), etc., that are administered by the Corps on the four lower Snake River facilities.

The following tabulation (Table 5-1) provides a breakdown of the number and types of those outgrants by facility. Their locations are identified on the plates accompanying this appendix. While not all of the outgrants will be affected by drawdown, it will be necessary to screen each of them for possible amendment, relinquishment, or termination depending upon the specific uses and agreements involved.

5.2 Reserved Rights

In certain instances, various rights were reserved by landowners when their property was acquired by the Government for the facilities. Examples of these reserved rights are cattle watering corridors, water pipelines, and the like. In the event of drawdown, it will be necessary in some cases to amend or terminate the rights that were reserved in the land acquisition deeds.

1. As referenced in PL 79-14, House Document 704, 75th Congress, 3rd Session authorized the Secretary of the Army to acquire lands to accommodate construction of the Lower Snake River Project. The land acquisition process involved extensive negotiations which resulted in some sellers reserving certain rights to use the land in perpetuity.

2. The impacts to holders of reserved rights will be evaluated in this report. In the event that the Lower Snake River Hydropower Project is returned to the original free flowing river, the following real estate actions may be taken to facilitate mitigation of the losses to the previous landowners:

    a. Obtaining right-of-entry permits from land owners contiguous to the Government facility boundary to authorize the Government to enter upon private land to construct facilities to mitigate for the losses, i.e., drilling wells to provide livestock water.

Table 5-1. Outgrants on the Four Lower Snake River Facilities

Ice Harbor	
Easements	50
Leases	3
Licenses	1
Permits	4
Subtotal	58
Lower Monumental	
Easements	47
Leases	3
Licenses	1
Permits	13
Subtotal	64
Little Goose	
Easements	20
Leases	8
Licenses	3
Permits	7
Subtotal	38
Lower Granite	
Easements	101
Leases	19
Licenses	2
Permits	9
Subtotal	131
Total Outgrants	**291**[1/]

1/ This represents a total from a specific point in time. The dynamic nature of the outgranting process (i.e., ongoing new actions, expirations, etc.) will cause the actual number to fluctuate.

Source: Walla Walla District Real Estate Database

b. In consideration for the mitigation to be performed by the Government, the affected owners would be required to execute quitclaim deeds to relinquish the rights that the original owners had previously reserved.

c. The processing of quitclaim deeds would require an Environmental Baseline Study (EBS) to verify that there are no environmental concerns present in the reserved areas. Completion of the EBS would entail a records search to verify past uses and the potential for remedial actions to be taken for the site. In addition, a site survey would be required to document the physical condition of the area. Any remediation (i.e., hazardous waste cleanup) required for the areas that were reserved in the deeds would be the responsibility of the previous land owner.

5.3 Park and Recreation Leases

The 1944 Flood Control Act (16 U.S.C. § 460d) authorized the Secretary of the Army to enter into leases at water resource development facilities for recreational development and other public uses. The leases are normally granted for a term of 25 years to a state or political subdivision thereof, i.e., county, city or port authority, at no cost with the consideration being the development, operation and maintenance of the facilities. (The one commercial concession lease to a private party at Ice Harbor, is for a 10-year term with rent payable under the revised graduated rent system and based upon a percent of the gross receipts.)

During the month of January 1998, a letter was sent to all Corps park and recreation lessees to advise them of the potential for reservoir drawdown. Under a drawdown premise, they were asked what impacts they would anticipate, how they would alter their operations, would they continue to operate any of the facilities, etc. Based upon their individual responses, the following actions were developed:

1. Amending leases to expand or delete the lease boundaries to accommodate the reduction or expansion of the facilities. As examples, a reduction would be to close a marina or swimming area and an expansion would be to extend or relocate a boat launching ramp.

2. Generally, leases may be relinquished by the lessee by giving a 1-year written notice to the issuing office. If the lessee elects to relinquish the lease back to the Government, a negotiated termination would be involved.

3. A termination of the lease would involve completion of an EBS to compare the condition of the leased premises at the time the lease was issued to the time at which it was terminated. Completion of the EBS would require a records search to verify any past uses and potential for or remedial actions taken for the site. In addition, a site survey would be required to document the physical condition of the area. Any required remediation would be the responsibility of the lessee, as required by the leases.

4. A termination of the lease would also involve completion of an Inventory and Condition Report. This report is a list of both the real and personal Government property that was originally made available with the lease. This process would require a comparison of the condition of the

Government property, both real and personal, that was originally granted under the lease to that which was inventoried at the time of termination. Any discrepancies would most likely result in a negotiated settlement.

5. In the event that a termination would occur by relinquishment from the lessee, an effort would be made to solicit a new lessee to operate the facilities. Due to declining funds for operation and maintenance programs, the Government may close park and recreation facilities if a lessee could not be obtained.

5.4 Easements

By the authorities contained in 42 U.S.C. § 961, 10 U.S.C. § 2668 and 10 U.S.C. § 2669 the Secretary of the Army is authorized to grant easements at water resource development facilities for various purposes including roads, utilities, pipelines and pumping plants. The term is commensurate with the use, but normally ranges from 25 years to perpetuity.

Real Estate work effort required to address easement issues will involve the following:

1. Amending easement deeds to expand the easement boundaries to accommodate relocation or extension of the facilities. Many facilities will not be affected, but intakes for pumping plants may need to be extended to the original free flowing river, in which case the easement would be amended. In the event that a facility needs to be relocated, the existing easement would be terminated and a new one issued.

2. Any expansion or relocation of facilities would involve completion of an EBS to verify the condition of the existing area and to evaluate the expanded or relocated area. Completion of the EBS would require a records search to verify any past uses and potential for or remedial actions taken for the site. In addition, a site survey would be required to document the physical condition of the area. Any remediation required for the areas presently under easement would be the responsibility of the grantee.

5.5 Acquire Rights-of-Entry or Other Agreements to Perform Mitigation on Private Lands

This will involve negotiation of agreements with affected property owners to perform mitigation outside of the Lower Snake River Hydropower Project lands. Examples would be drilling new domestic water wells to replace those that may go dry, negotiating with the States of Washington and Idaho to construct boat launch facilities below the banks of the free flowing river, and installing irrigation pumps, piping and related facilities to enable continued irrigation of an estimated 14,974 hectares (37,000 acres) above Ice Harbor Dam. Once the mitigation measures have been identified and authorized for implementation, the following real estate actions would be required:

1. Identify and locate the property owners and negotiate the mitigation measures required to compensate them for their losses

2. Process right-of-entry permits to enter upon private land and perform the mitigation work

3. Negotiate agreements with the States of Washington and Idaho to construct facilities extended below the banks of the free flowing river
4. Due to drawdown to a free flowing river, it will likely become necessary to acquire additional lands for mitigation purposes
5. Any work conducted outside of existing project boundaries will require the completion of an EBS. The EBS would require a title search to verify any past uses by previous owners that would indicate the potential for or remedial actions to be taken for the site. In addition, a site survey would be required to document the physical condition of the area.
6. Various measures are discussed in this feasibility report as methods to mitigate for the anticipated impacts to certain individuals and entities as a result of a drawdown to natural river conditions. The Corps is not authorized to perform many of these mitigation measures.

5.6 Relocation Contracts

In some instances, it will become necessary to enter into relocation contracts for alteration or replacement of structures affected by the drawdown. The Real Estate involvement would include participation in the negotiations to help assure that the contracts are in compliance with pertinent laws and regulations, and for exchanges of rights-of-way, if necessary.

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6. Administrative Cost Development

6.1 Cattle Watering Corridors

During real estate acquisition of the four lower Snake River facilities, Government acquisition deeds reserved to certain riparian owners the right to allow livestock passage over specified routes to the river. (A single reservation may involve multiple routes.) These reservations are perpetual and cannot be unilaterally terminated. If drawdown is implemented, continued livestock access will be incompatible with salmon recovery efforts. In order to mitigate for removing the corridors as a water source, the Government could recommend drilling solar powered upland wells on affected property owners' land. Accordingly, the real estate recommendation is to obtain rights-of-entry for constructing the wells and, in exchange for providing this alternative water source, request that the landowners quitclaim all existing deed reservations to the Government. The estimated real estate administrative costs for the foregoing actions are tabulated below. Because some of the corridor relinquishments are anticipated to result in condemnation proceedings, those costs are allowed for in the totals in Table 6-1.

Table 6-1. Real Estate Costs for Mitigation of Discontinued Livestock Passage

Facility	No. of Deed Reservations	Administrative Cost
Ice Harbor	7	$ 70,000
Lower Monumental	17	170,000
Little Goose	11	110,000
Lower Granite	6	60,000
Total	41	$410,000

Source: Walla Walla District Real Estate Database

6.2 Public Park and Recreation (PPR) Leases

The real estate administrative costs for this type of outgrant arise from either modifying an existing lease document, issuing a new lease, or processing a relinquishment if the lessee opts to discontinue its operation. Many of the actions associated with these alternatives are similar in scope and cost. Most of the PPR leases will be impacted. Accordingly, the estimated administrative costs arising from processing them in one of the foregoing ways are tabulated in Table 6-2.

Table 6-2. Real Estate Costs for Processing Public Park and Recreation (PPR) Leases

Facility	No. of PPR Leases	Administrative Cost
Ice Harbor	1*	$ 6,000
Lower Monumental	2	12,000
Little Goose	2	2,000
Lower Granite	8	48,000
Total	13	$78,000

*Commercial concession

Source: Walla Walla District Real Estate Database

6.3 Pump Stations and Appurtenances

Drawing down the four lower Snake River reservoirs will impact the ability of water users to irrigate vast areas of cropland, wildlife habitat and recreational areas. Consequently, outgrant agreements will be subject to relinquishment or appropriate modification. Overall scope and costs are similar for either alternative. In many cases, several pumping operators who occupy a single platform hold subleases with the primary grantee. (These agreements are between the parties themselves and not subject to Government administration.) The estimated real estate administrative costs for those outgrants which are affected by drawdown are tabulated in Table 6-3.

Table 6-3. Real Estate Costs for Modifying Pump Station and Appurtenance Agreements

Facility	No. of Pump & Pipeline Outgrants	Administrative Cost
Ice Harbor	12	$48,000
Lower Monumental	0	0
Little Goose	0	0
Lower Granite	2	8,000
Total	14	$56,000

Source: Walla Walla District Real Estate Database

Approximately 14,974 hectares (37,000 acres) of cropland along Ice Harbor are irrigated by water withdrawn from Lake Sacajawea. Once drawdown is implemented, many farmers will lose the ability to pump from their existing river locations. One solution advanced by the engineering appendix attending this study is to construct a large common pumping station at a deep water upstream location along with a 17,038± meter (55,900± foot) pipeline capable of continued delivery of up to 19.3 cubic meters (680 cubic feet) per second to the affected irrigators. (See the Engineering Appendix D, Annex O for the proposed alignment and additional specifications.) The pipeline would require a corridor width of about 30.5 meters (100 feet) for construction, operation and maintenance. About 8,534.4 meters (28,000 feet) of its alignment 8.3 kilometers (5.3± miles) would lie outside of the existing facility boundary and affect at least 8 irrigators. The pipeline would also cross the Union Pacific Railroad in two places and cross the Snake River at two other locations.

As previously stated, the proposed solution would provide a substitute point of withdrawal and related water pipelines/facilities to serve approximately 8 irrigators whose existing pumping ability will be impacted by drawdown. It is assumed that if Congress authorized and funded construction, the replacement facilities and rights-of-way would be turned over at no cost to the benefiting irrigators for operation and maintenance. This would require that an association, corporation, or other entity be formed with legal authority to contract with the Government concerning the rights and responsibilities associated with the ownership, operation and maintenance of the facilities. The Government would need to enter into a Memorandum of Agreement with the legal entity to formalize the rights and obligations of the parties prior to real estate acquisition or construction. After construction, the Government would quitclaim the facilities and rights-of-way to the legal entity including necessary rights-of-way over facility lands.

It is anticipated that the Government would secure the necessary real estate rights to accommodate this initiative. It is assumed that rights-of-entry for construction would be obtained from the benefiting irrigators at no cost. It is recommended that licenses be obtained from the railroad for the two pipeline crossings. A license or similar agreement from Washington Department of Natural Resources is proposed for the two river crossing locations, and a pipeline easement would be required for the two areas under the jurisdiction of the Washington Department of Parks. The estimated real estate administrative costs for this initiative are tabulated in Table 6-4.

Table 6-4. Real Estate Costs for Pumping Station and Pipeline to Irrigators

Item (Ice Harbor only)	Administrative Cost
Rights-of-entry (8), MOA negotiation	$40,000
Railroad licenses (2 locations)	25,000
WA Dept. of Parks easement (2 locations)	5,000
Quitclaim deed & easement processing	10,000
Total	$80,000

Source: Walla Walla District Real Estate Database

6.4 Structure Modification and Protection

According to the Engineering Appendix attending this study, long term drawdown will create the need for modification/protection of affected structures along the four-reservoir reach. (That appendix also cites specific locations and outlines recommended remedies.) Broadly stated, such initiatives would include stabilizing 25 bridge features, protecting 51 embankment reaches, and modifying 500 drainage structures. While no real estate acquisition is anticipated for any of these measures, there would be administrative costs associated with participating in relocation contract negotiations, securing any temporary rights (i.e., licenses, permits, etc.) for working on off-facility properties, and extinguishing abandoned rights-of-way, if any. For planning, the estimated number of private/public owners involved and the corresponding real estate administrative costs are tabulated in Table 6-5.

6.5 Off-Facility Domestic Wells

A review of well logs indicates that approximately 180 domestic water wells lie along the 225.3-kilometer (140-mile) drawdown reach. Of those, about 39 percent will be negatively affected by drawdown, requiring them to be completely redrilled. Real estate involvement could entail securing rights-of-entry for construction from an anticipated 71± off-facility well owners within 1.6 kilometers (1 mile) from the facility boundary (assumed for planning to be one owner per well). The estimated real estate administrative costs for this activity are tabulated in Table 6-6.

6.6 Utility Crossings and Effluent Lines

A total of three utility crossings and effluent lines have been identified which may be modified/protected by the respective grantees themselves. All work should take place within the existing easement corridors. Real estate will be a participant in the relocation contract negotiations attending each crossing. The administrative costs for that activity are broken down in Table 6-7.

Table 6-5. Real Estate Costs for Structure Modification and Protection

Facility	No. of Owners	Administrative Cost
Bridges		
Ice Harbor	0	$ 0
Lower Monumental	3	15,000
Little Goose	2	10,000
Lower Granite	7	35,000
Subtotal	12	$60,000
Embankment Protection		
Ice Harbor	2	$ 10,000
Lower Monumental	2	10,000
Little Goose	2	10,000
Lower Granite	2	10,000
Subtotal	8	$ 40,000
Drainage Structures		
Ice Harbor	5	$ 10,000
Lower Monumental	5	10,000
Little Goose	6	12,000
Lower Granite	9	18,000
Subtotal	25	$ 50,000
Overall Total, Structure Modification and Protection:		$150,000

Source: Walla Walla District Real Estate Database

Table 6-6. Real Estate Costs for Rights of Entry for Construction of New Domestic Wells

Facility	No. Rights of Entry	Administrative Cost
Ice Harbor	28	$ 84,000
Lower Monumental	15	45,000
Little Goose	15	45,000
Lower Granite	13	39,000
Total	71	213,000

Source: Walla Walla District Real Estate Database

Table 6-7. Costs for Relocation Contract Negotiations

Facility	No. of Crossings	Administrative Cost
Ice Harbor	0	$ 0
Lower Monumental	1	1,000
Little Goose	0	0
Lower Granite	2	3,500
Total	3	$ 4,500

Source: Walla Walla District Real Estate Database

6.7 Summary

Administrative costs are direct federal costs related to real estate actions that would result from drawdown. They do not include any costs for modification, relocation, and replacement of facilities.

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7. Recapitulation of Real Estate Administrative Costs

Table 7-1 contains a breakdown of the costs cited previously on a facility by facility basis.

Table 7-1. Real Estate Administrative Costs by Facility

	Administrative Cost
Ice Harbor	
Cattle watering corridors	$ 70,000
PPR leases	6,000
Pump stations/appurtenances	128,000
Structure modification/protection	20,000
Off-facility wells	84,000
Utility crossings	0
Total	$308,000
Contingency 20%	61,600
Facility total	$369,600
Lower Monumental	
Cattle watering corridors	$170,000
PPR leases	12,000
Pump stations/appurtenances	0
Structure modification/protection	35,000
Off-facility wells	45,000
Utility crossings	1,000
Total	$263,000
Contingency 20%	52,600
Facility total	$315,600
Little Goose	
Cattle watering corridors	$110,000
PPR leases	12,000
Pump stations/appurtenances	0
Structure modification/protection	32,000
Off-facility wells	45,000
Utility crossings	0
Total	$199,000
Contingency 20%	39,800
Facility total	$238,800

Table 7-1. Real Estate Administrative Costs by Facility

	Administrative Cost
Lower Granite	
Cattle watering corridors	$ 60,000
PPR leases	48,000
Pump stations/appurtenances	8,000
Structure modification/protection	63,000
Off-facility wells	39,000
Utility crossings	3,500
Total	$221,500
Contingency 20%	44,300
Facility total	$265,800
Grand Total All Facilities (1998 dollars):	$1,189,800

NOTE: The contingency percentage that has been applied to the above real estate administrative costs reflects grantee notification and processing the myriad outgrants not specifically cited (After drawdown, these miscellaneous impacted areas will become more readily apparent). It also reflects the cost of securing blanket licenses from the States of Washington and Idaho to enable work in the original riverbed to construct cofferdams and extend pipelines and boat launch facilities.

Source: Walla Walla District Real Estate Database

8. Recommendations

In the event that Congress authorizes decommissioning of the four lower Snake River facilities and the reservoirs are drawn down, it is recommended:

a. That the Corps of Engineers retain jurisdiction over the land holdings throughout the biological evaluation process. This would avoid the additional time and expense required to reacquire the land and would preclude any incompatible uses of the land during this interim period.

b. That authority be granted (and funds made available) to acquire any additional real estate rights which may become necessary for the salmon recovery program and to manage the existing outgranting program in accordance with sound real estate practice. As the records-holding agency, the Corps of Engineers is best suited to manage and mitigate impacts to existing grantees and otherwise administer project lands during the evaluation phase.

c. That the Government, subject to Congressional authorization and funding appropriations, and to the extent reasonably possible, mitigate impacts to holders of existing outgrants and reserved rights by providing substitute rights-of-way and replacement or relocation of facilities.

d. At the request of the port commissions, that deed restrictions on lands previously conveyed for public port and industrial purposes be conditionally released or amended as necessary since reservoir drawdown may render such uses impractical.

e. In the event of deauthorization of the four Lower Snake River facilities, that new authority be given to the Corps of Engineers to retain and manage sufficient lands to provide for an ecosystem corridor to ensure the viability of the salmon recovery program, and that the quantity and use of the lands to be retained for this purpose will be coordinated with regional stakeholders, including NMFS, the U.S. Fish and Wildlife Service, Tribes, Washington Department of Fish and Wildlife, and the Idaho Department of Fish and Game.

f. That, at Ice Harbor, the replacement water withdrawal facilities and rights-of-way be turned over at no cost to an as yet to be determined legal entity for ownership, operation, and maintenance.

g. If Congress authorizes natural river drawdown and decides to compensate members of the public as they did for certain damages resulting from the 1992 Lower Granite drawdown test, it is recommended that the compensation, authorization, and appropriations be enacted prior to the actual drawdown events. This would allow baseline information to be gathered, claim procedures to be developed and the process to be expedited.

h. In the event that dam breaching is authorized and funds and resources were made available, a real estate plan and associated gross appraisal would be required. This would be done in conjunction with the detailed design report referenced in section 3.4 of the FR/EIS.

9. Glossary

Alternative 1 – Existing Conditions – The existing hydrosystem operations under the National Marine Fisheries Service's 1995 and 1998 Biological Opinions. The Corps would continue to increase spill and manipulate spring and summer river flows as much as possible to assist juvenile salmon and steelhead migration. Juvenile salmon and steelhead would continue to pass the dams through the turbines, over spillways, or through the fish bypass systems. Transportation of juvenile fish via barge or truck would continue at its current level.

Alternative 2 – Maximum Transport of Juvenile Salmon – The existing hydrosystem operations plus maximum transport of juvenile salmon, without surface bypass collectors. The number of juvenile fish transported via barge or truck would be increased to the maximum extent possible.

Alternative 3 – Major System Improvements – The existing hydrosystem operations and maximum transport of juvenile salmon, but with additional major system improvements (such as surface bypass collectors) that could be accomplished with dam breaching.

Alternative 4 – Dam Breaching – Natural river drawdown of the four lower Snake River reservoirs.

Dam Breaching – In the context of the Lower Snake River Salmon Migration Feasibility Report/Environmental Impact Statement, dam breaching involves removal of the earthen embankment section at Lower Granite and Little Goose, and formation of a channel around Lower Monumental and Ice Harbor.

Drawdown – In the context of the Lower Snake River Salmon Migration Feasibility Report/Environmental Impact Statement, drawdown means returning the lower Snake River to its natural, free-flowing condition via dam breaching.

Habitat Management Units (HMUs) – Sixty-two parcels of land scattered along the river and reservoirs purchased and managed by the Corps as mitigation for the land that inundated as a result of the dams and reservoirs. These HMUs are managed to replace hunting, fishing, and recreation opportunities lost as a result of inundation as well as to benefit and provide for wildlife that lost habitat to inundation.

Irrigation - Artificial application of water to usually dry land for agricultural purposes.

Lower Snake River Hydropower Project – The four hydropower facilities operated by the Corps on the lower Snake River: Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams.

Minimum Operating Pool – The bottom one foot of the operating range for each reservoir. The reservoirs normally have a 3-foot to 5-foot operating range.

Mitigation – To moderate or compensate for an impact or effect.

Navigation – Method of transporting commodities via waterways; usually refers to transportation on regulated waterways via a system of dams and locks.

Pumping stations – Facilities that draw water through intake screens in the reservoir and pump water uphill to corresponding distribution systems for irrigation and other purposes.

Recovery – The process by which a ecosystem is restored so it can support self-sustaining and self-regulating populations of listed species as persistent members of the native biotic community. This process results in improvement in the status of a species to the point at which listing is no longer appropriate under the Endangered Species Act.

Riparian – Ecosystem that lies adjacent to streams or rivers and is influenced by the stream and its associated groundwater.

Survival – The species' persistence beyond the conditions leading to its endangerment, with sufficient resilience to allow for potential recovery from endangerment. The condition in which a species continues to exist into the future while retaining the potential for recovery.

ANNEX 1

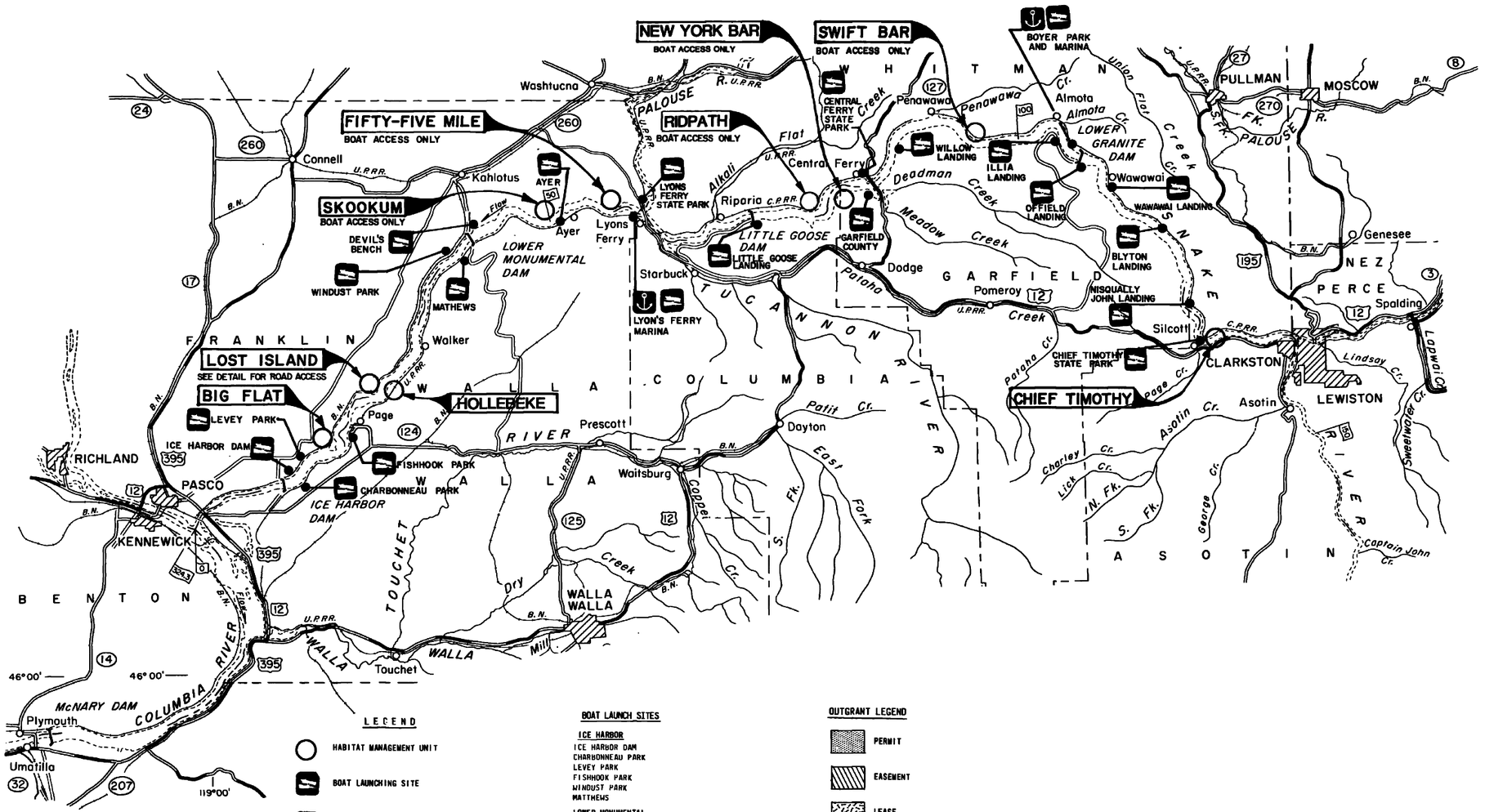
REAL ESTATE DRAWINGS

Real Estate Drawings

The following real estate drawings are a supplement to this appendix and are provided to depict pertinent informational data for the four lower Snake River facilities. The drawings are sequential, commencing at the lowest downstream facility, Ice Harbor, and continuing upstream to Lower Granite.

The key features to note are as follows:

- Vicinity of the dams
- Project boundary lines
- Original free flowing river delineation
- Normal operating pool elevation delineation
- River mile locations
- State and county boundaries
- Section, township and range data
- Real estate outgrants
- Reservations contained in the land acquisition deeds
- Recreation sites
- HMU sites



LEGEND

- HABITAT MANAGEMENT UNIT
- BOAT LAUNCHING SITE
- MARINA
- OPERATING POOL
- PROJECT BOUNDARY
- PAVED ROAD
- IMPROVED ROAD
- GRADED ROAD
- UNIMPROVED ROAD
- SECTION CORNER
- EXISTING FENCE ON GOVERNMENT BOUNDARY
- HMU HABITAT MANAGEMENT UNIT

BOAT LAUNCH SITES

ICE HARBOR
ICE HARBOR DAM
CHARBONNEAU PARK
LEVEY PARK
FISHHOOK PARK
WINDUST PARK
MATTHEWS

LOWER MONUMENTAL
DEVIL'S BENCH
AYER BOAT BASIN
LYONS FERRY MARINA
LYONS FERRY STATE PARK

LITTLE GOOSE
LITTLE GOOSE LANDING
CENTRAL FERRY STATE PARK
GARFIELD COUNTY RAMP
WILLOW LANDING
ILLIA LANDING
BOYER PARK & MARINA

LOWER GRANITE
OFFIELD LANDING
WAWAWAI LANDING
BLYTON LANDING
MISQUALLY JOHN LANDING
CHIEF TIMOTHY STATE PARK

OUTGRANT LEGEND

- PERMIT
- EASEMENT
- LEASE
- RESERVATION
- SALE
- LICENSE

NOTE:

U.P.R.R. B.N. AND C.P.R.R. RIGHTS OF WAY SHOWN ON THESE SHEETS ARE NOT IN GOVERNMENT OWNERSHIP EXCEPT WHERE RAILROAD CROSSES THE DAM AXES.

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WALLA WALLA, WASHINGTON

LOWER SNAKE RIVER
LOCATION MAP AND LEGEND
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

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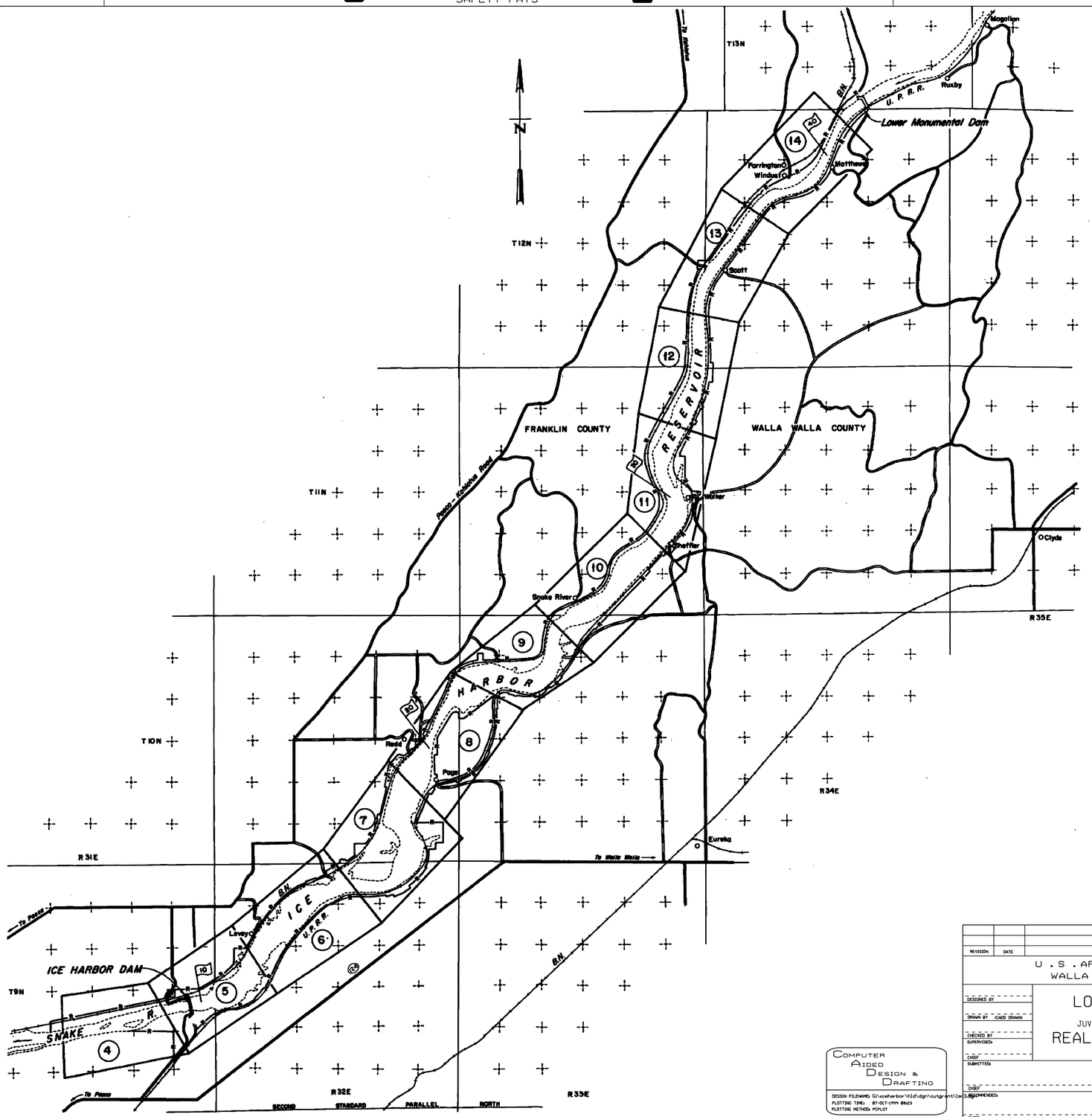

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LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

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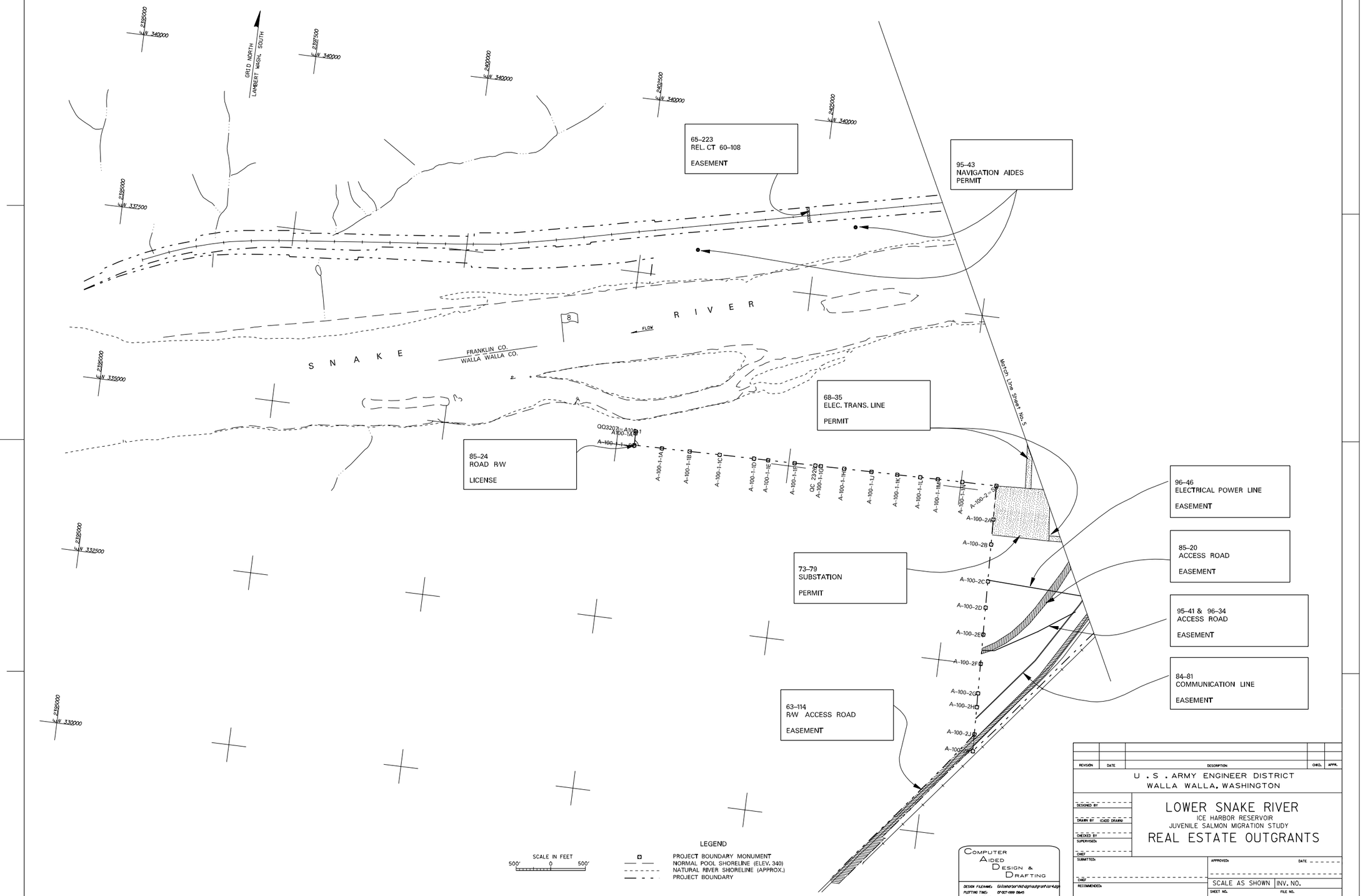

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RECOMMENDED
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LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED DATE

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104-211H
L/S UNDER PASS
EASEMENT

2-95-45
ELEC. TRANS. LINE
EASEMENT

60-211
ROAD R/W
PERMIT

65-223
ROAD R/W
EASEMENT

63-86
L/W AND PIPELINE
EASEMENT

68-89
IRR. PIPELINE AND
PUMPING PLANT
EASEMENT

95-43
NAVIGATION AIDES
PERMIT

60-211
ELEC. LINES
PERMIT

73-79
ACCESS ROAD
PERMIT

68-35
ELEC. TRANS. LINE
AND ACCESS ROAD
PERMIT

84-81
CABLE & POLE COMMUNICATION
EASEMENT

63-114
ACCESS ROAD R/W
EASEMENT

70-95
PUMPING PLANT
AND PIPELINE
EASEMENT

65-492
POWERLINE
EASEMENT

1-97-85
CHARBONNEAU PARK
BOAT STORAGE AND MARINA
LEASE

RESOURCES 2-95-39
LICENSE FOR ROAD R/W

EASEMENT FOR PIPELINE AND
PUMPHOUSE
84-74

97-25
ACCESS TO PUMP HOUSE
EASEMENT

GRID NORTH
LAMBERT WASH. SOUTH

T. 8 N., R. 31 E., W.M.
T. 9 N., R. 32 E., W.M.

Match Line Sheet No. 6

Match Line Sheet No. 4

LAKE
CHARLENE
HMU

CHARBONNEAU
HMU

CHARBONNEAU
PARK

ROGER'S
REEF

ICE HARBOR DAM

R I V E R

S N A K E

FRANKLIN CO.
WALLA WALLA CO.

FLOW

T. 9 N., R. 31-32 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 440)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

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WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED | APPROVED | DATE:
CHIEF
RECOMMENDED | SCALE AS SHOWN | INV. NO.
CHIEF | SHEET NO. 5 | FILE NO.

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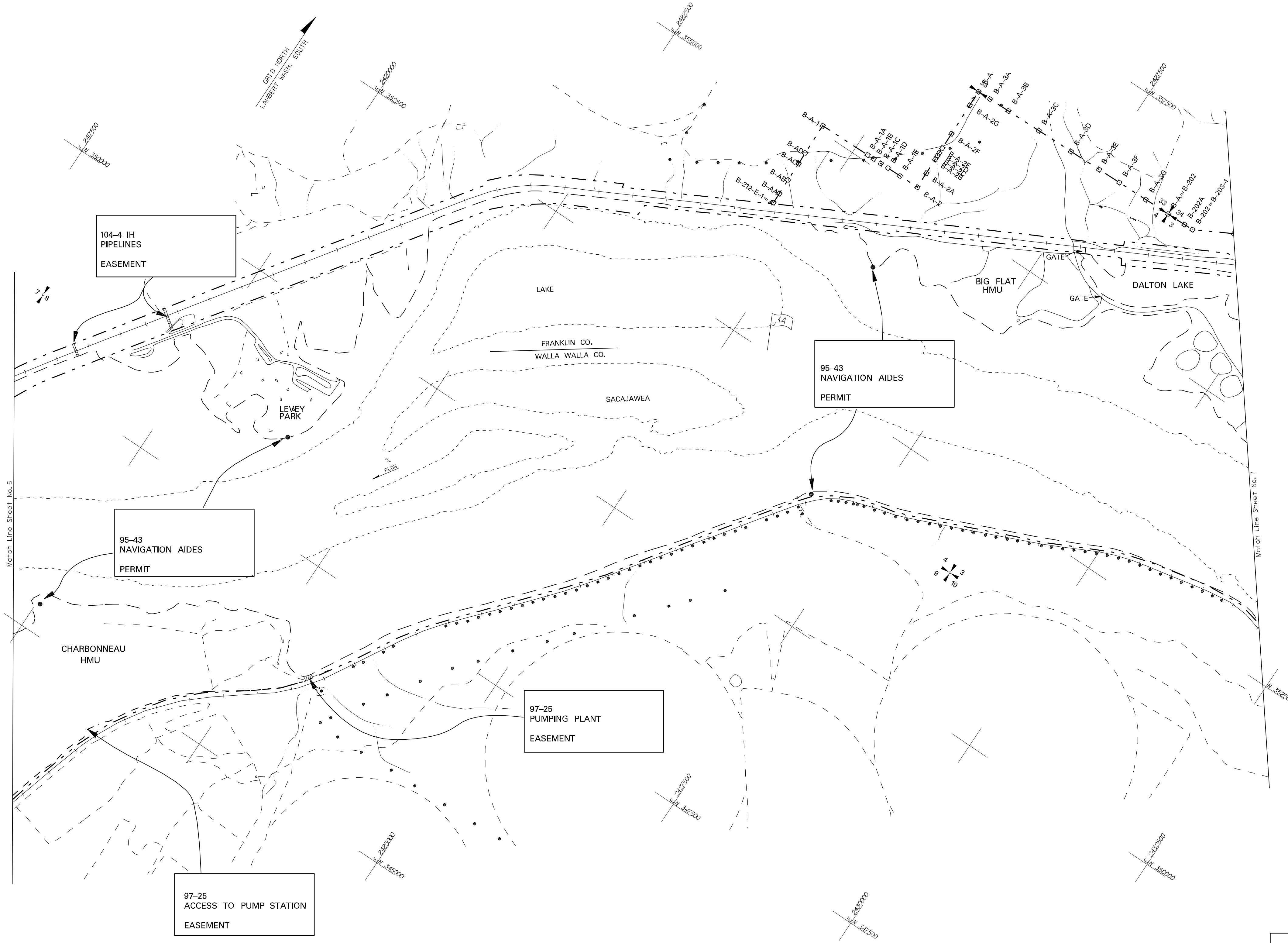

T. 9-10 N., R. 32 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 440)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\iceharbor\hld\dgn\outgrant\lsr6.dgn
PLOTTING TIME: 07-OCT-1999 09:37
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U.S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED:
CHIEF
SUBMITTED:
CHIEF
RECOMMENDED:
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED: DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 6 | FILE NO.

REVISED BLK DATE NOV.27 95

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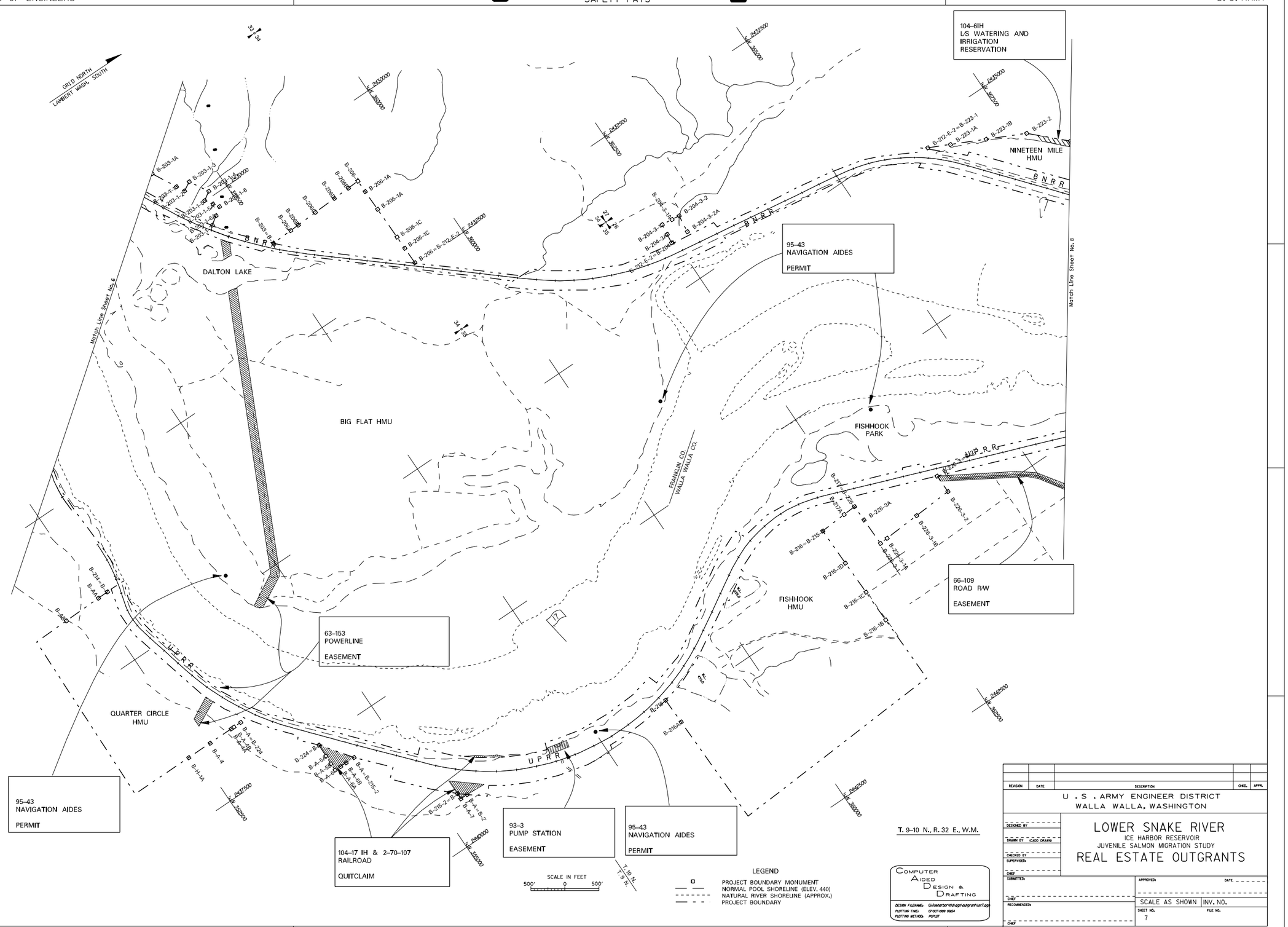

T. 9-10 N., R. 32 E., W.M.

COMPUTER AIDED DESIGN & DRAFTING

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PLOTTING TIME: 07-OCT-1999 09:54
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
APPROVED DATE
CHIEF
RECOMMENDED
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 7 | FILE NO.

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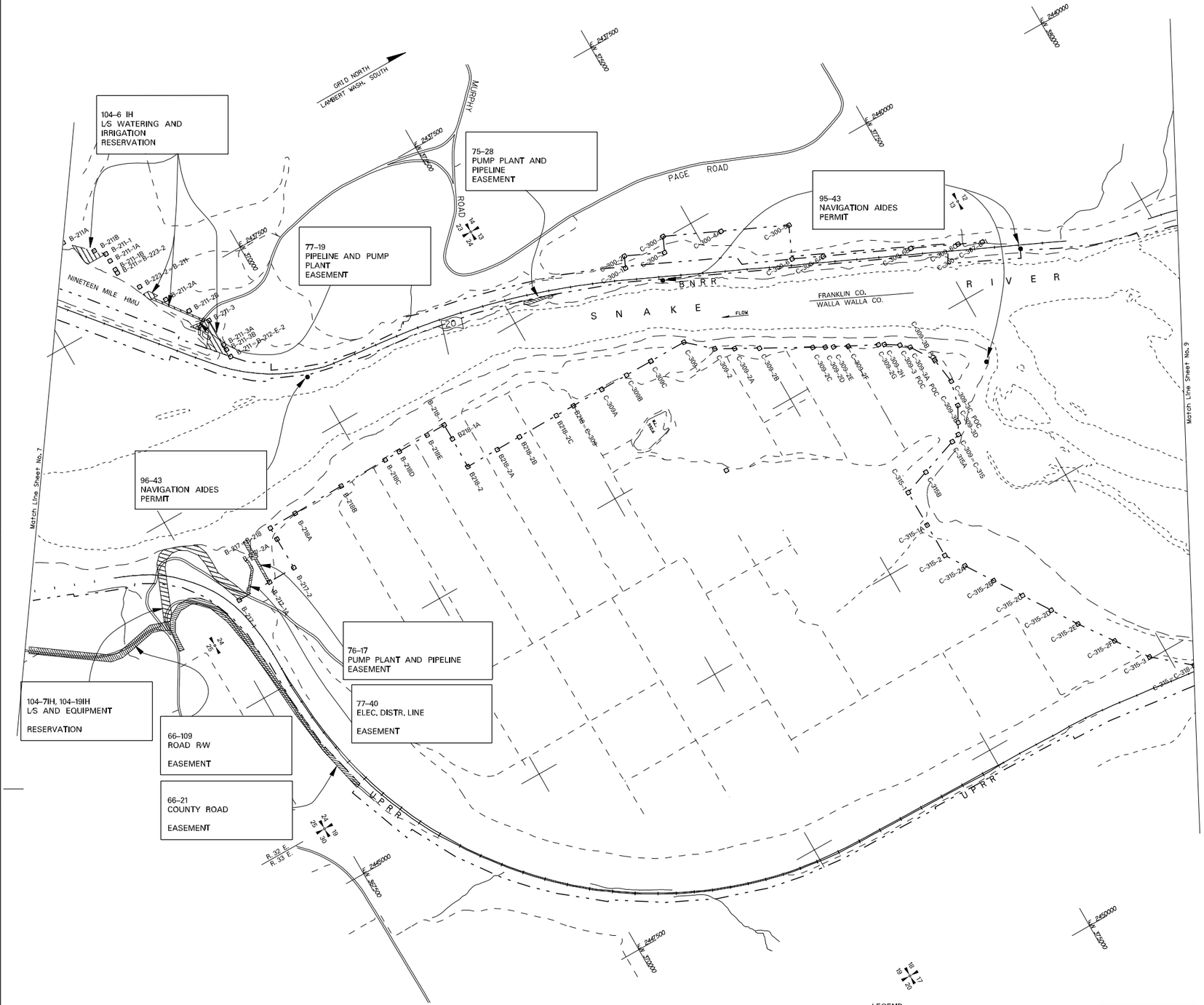
07-OCT-1999 09:54



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PLOTTING METHOD: POPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 8 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\iceharbor\hld\dgn\outgrant\isr8
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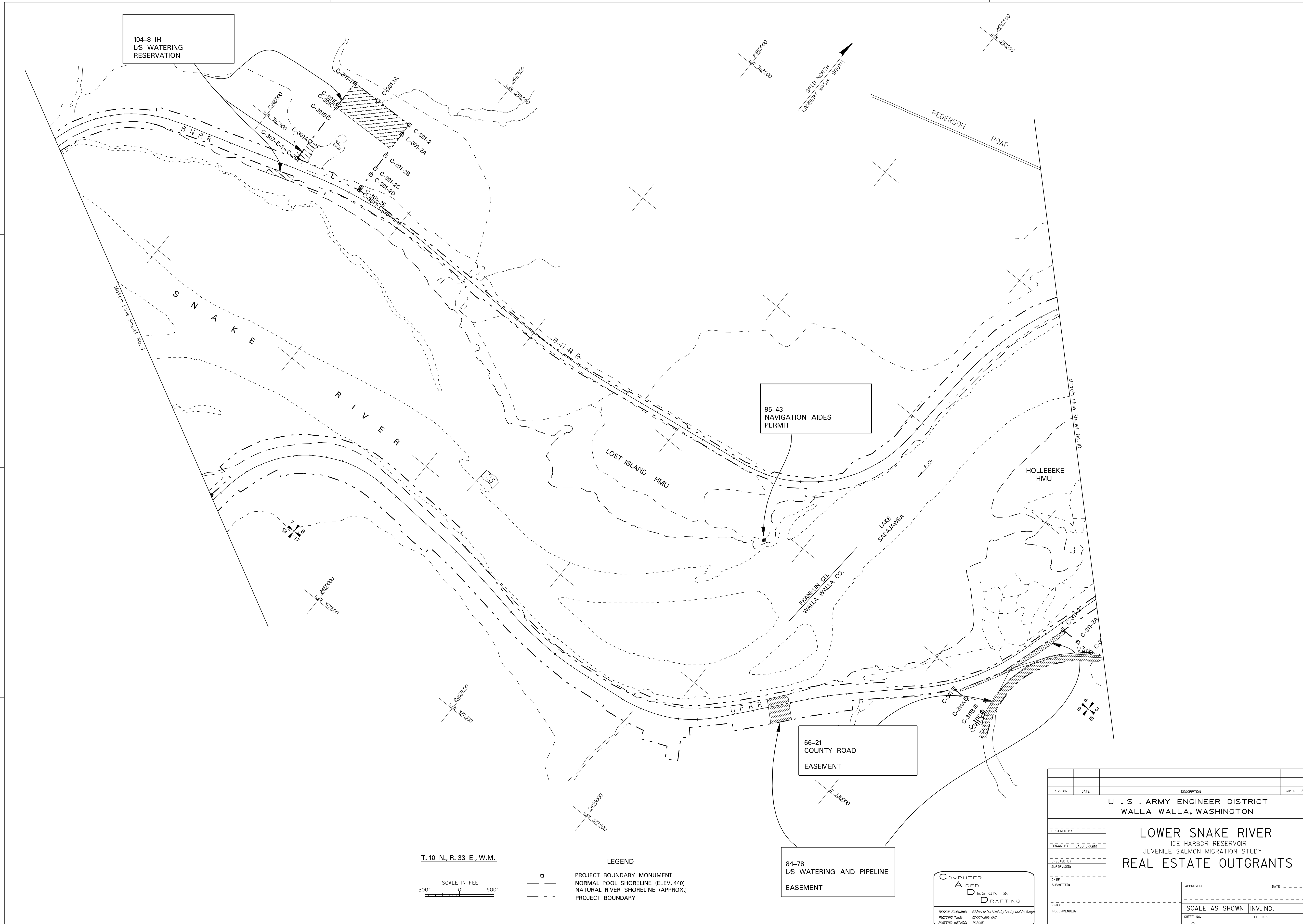
CORPS OF ENGINEERS | SAFETY PAYS | U. S. ARMY



VALUE ENGINEERING PAYS

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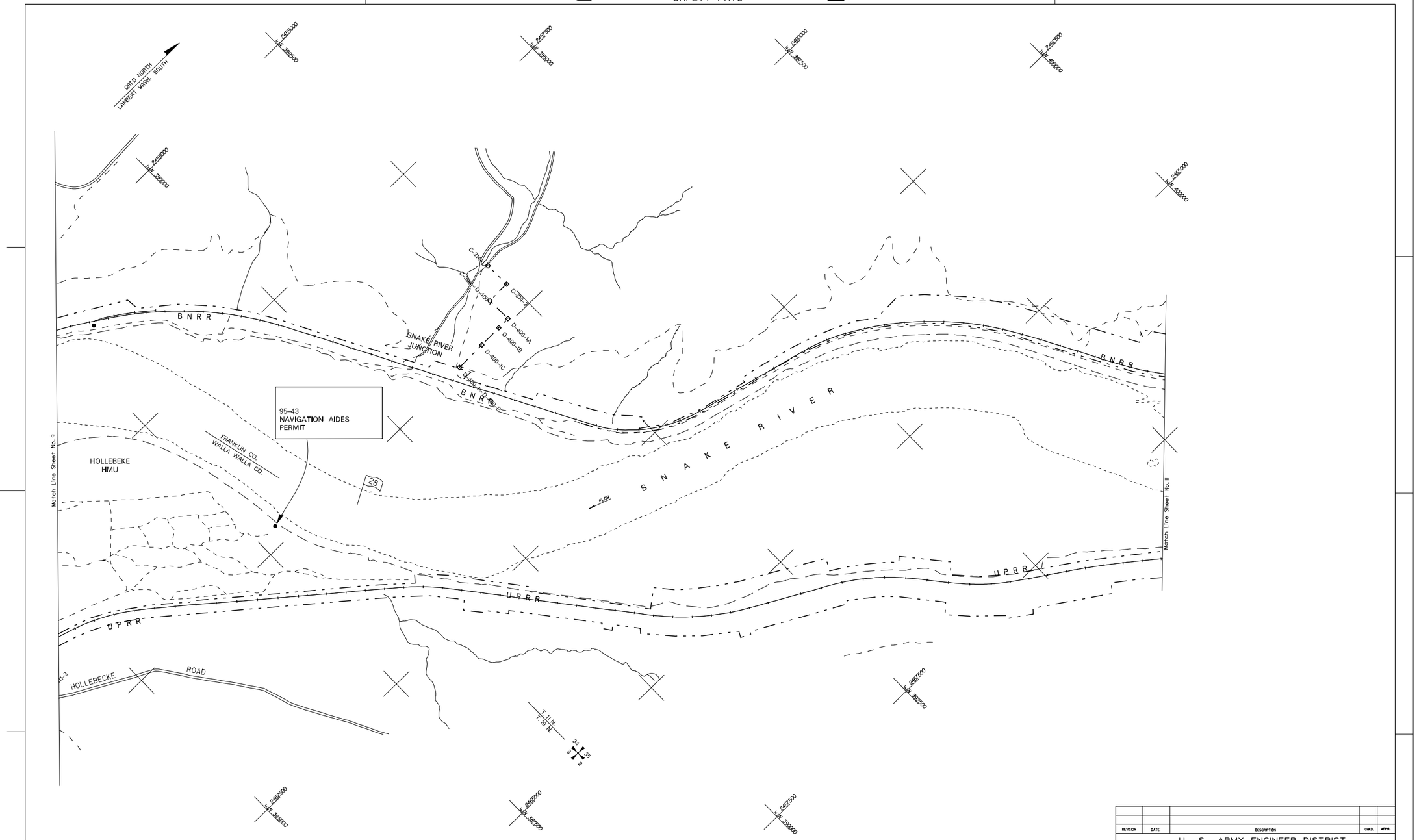

T. 10–11 N., R. 33 E., W.M.

SCALE IN FEET
500′ 0 500′

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 440)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

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PLOTTING TIME: 07-OCT-1999 10:25
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

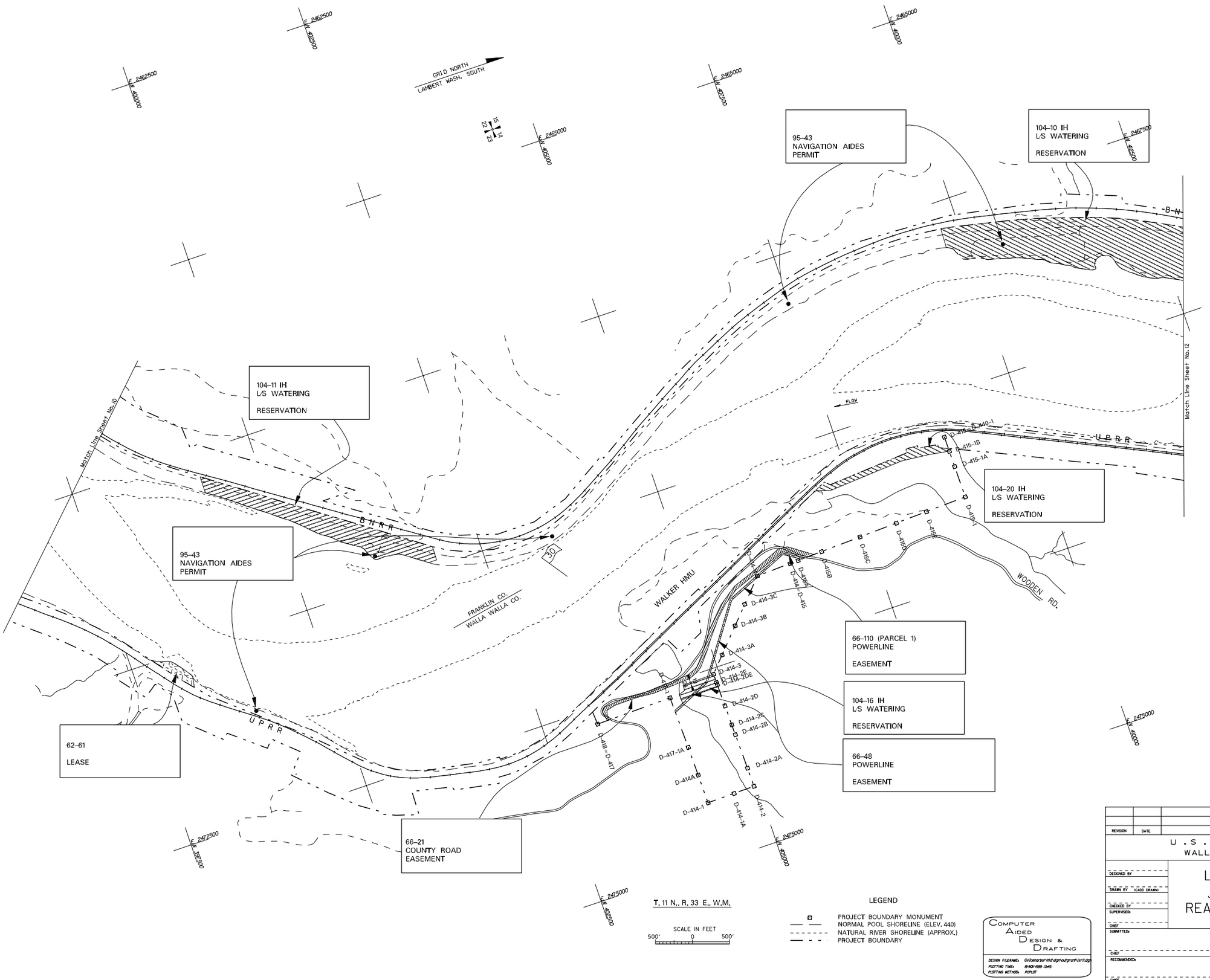
DESIGNED BY
DRAWN BY (CADD DRAFTR)
CHECKED BY
SUPERVISOR
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED DATE

SCALE AS SHOWN | INV. NO.
SHEET NO. 10 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\Iceharbor\hld\dgn\outgrant\lsr1(07-OCT-1999 10:25



COMPUTER AIDED DESIGN & DRAFTING

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PLOTTING TIME: 18-NOV-1999 13:45
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

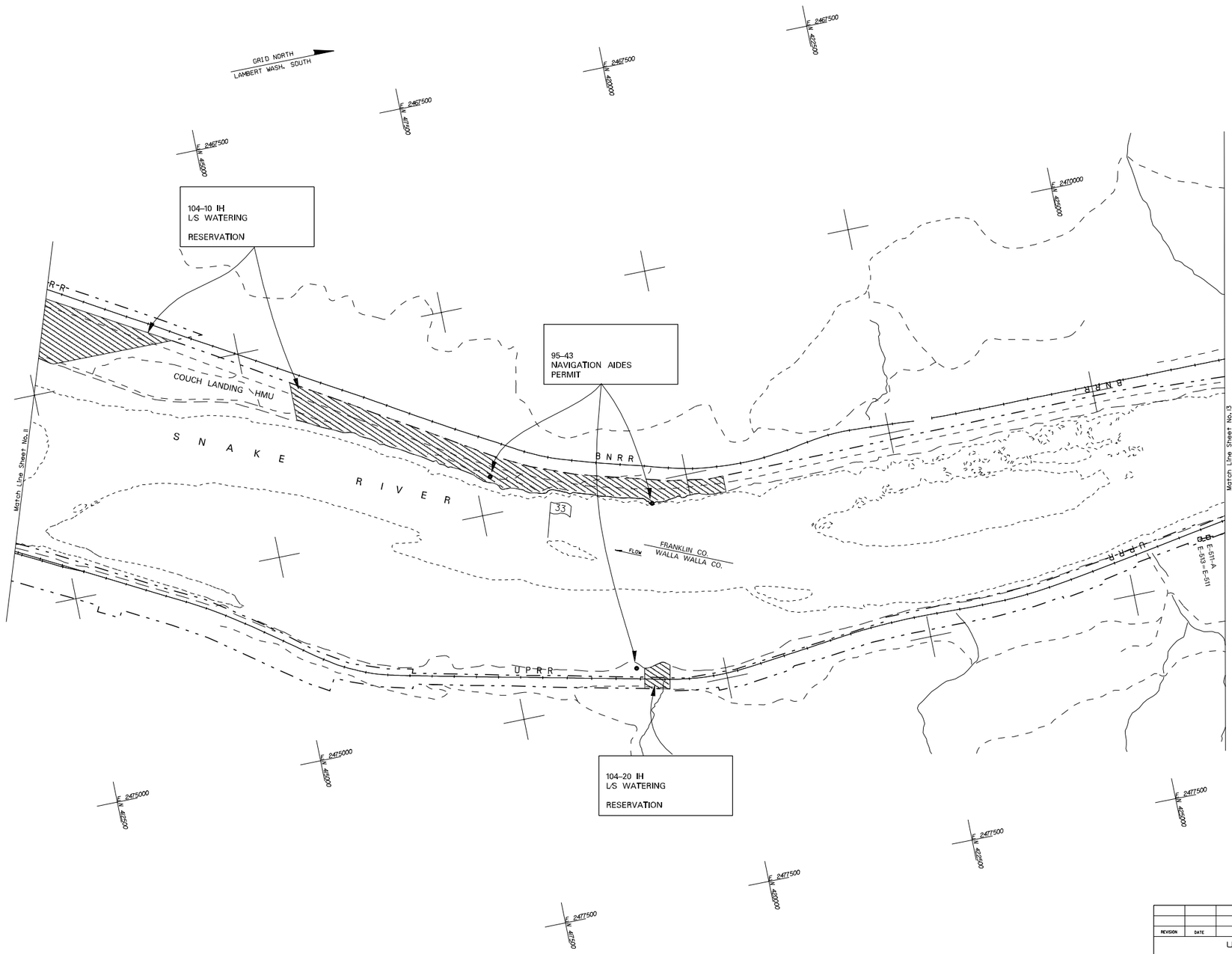
DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF
SCALE AS SHOWN
INV. NO.
SHEET NO. 11
FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\iceharbor\hld\dgn\outgrant\lsrl
18-NOV-1999 13:45

CORPS OF ENGINEERS | SAFETY PAYS | U. S. ARMY



T. 11 N., R. 33 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 440)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\iceharbor\hld\dgn\outgrant\isr12.dgn
PLOTTING TIME: 07-OCT-1999 10:46
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

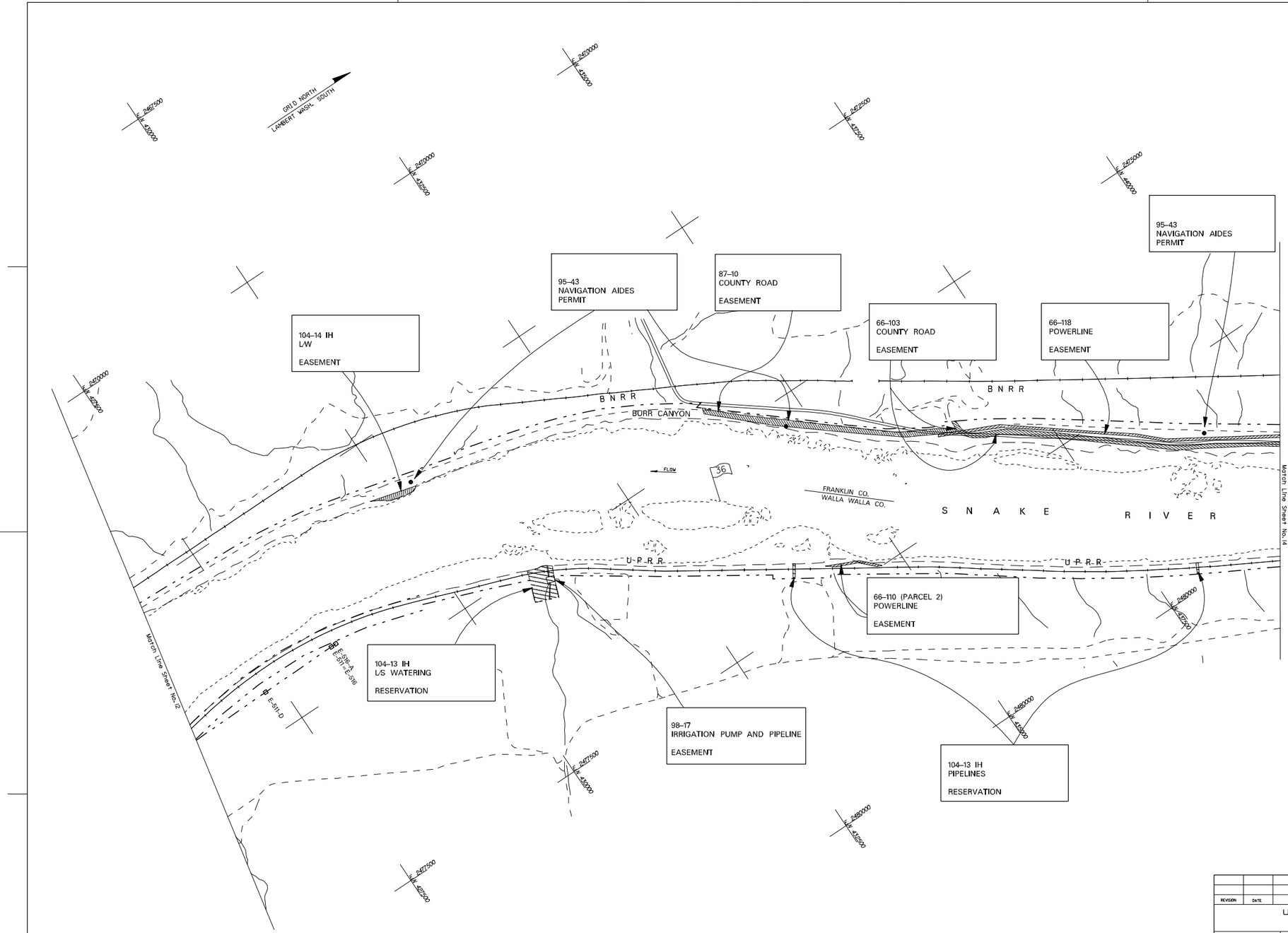
DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF
SCALE AS SHOWN | INV. NO.
SHEET NO. 12 | FILE NO.

VALUE ENGINEERING PAYS

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\iceharbor\hld\dgn\outgrant\isr1 07-OCT-1999 10:46



T. 11-12 N., R. 33-34 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 440)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\iceharbor\hld\dgn\outgrant\isr13.dgn
PLOTTING TIME: 07-OCT-1999 10:54
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 13 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\iceharbor\hld\dgn\outgrant\isri
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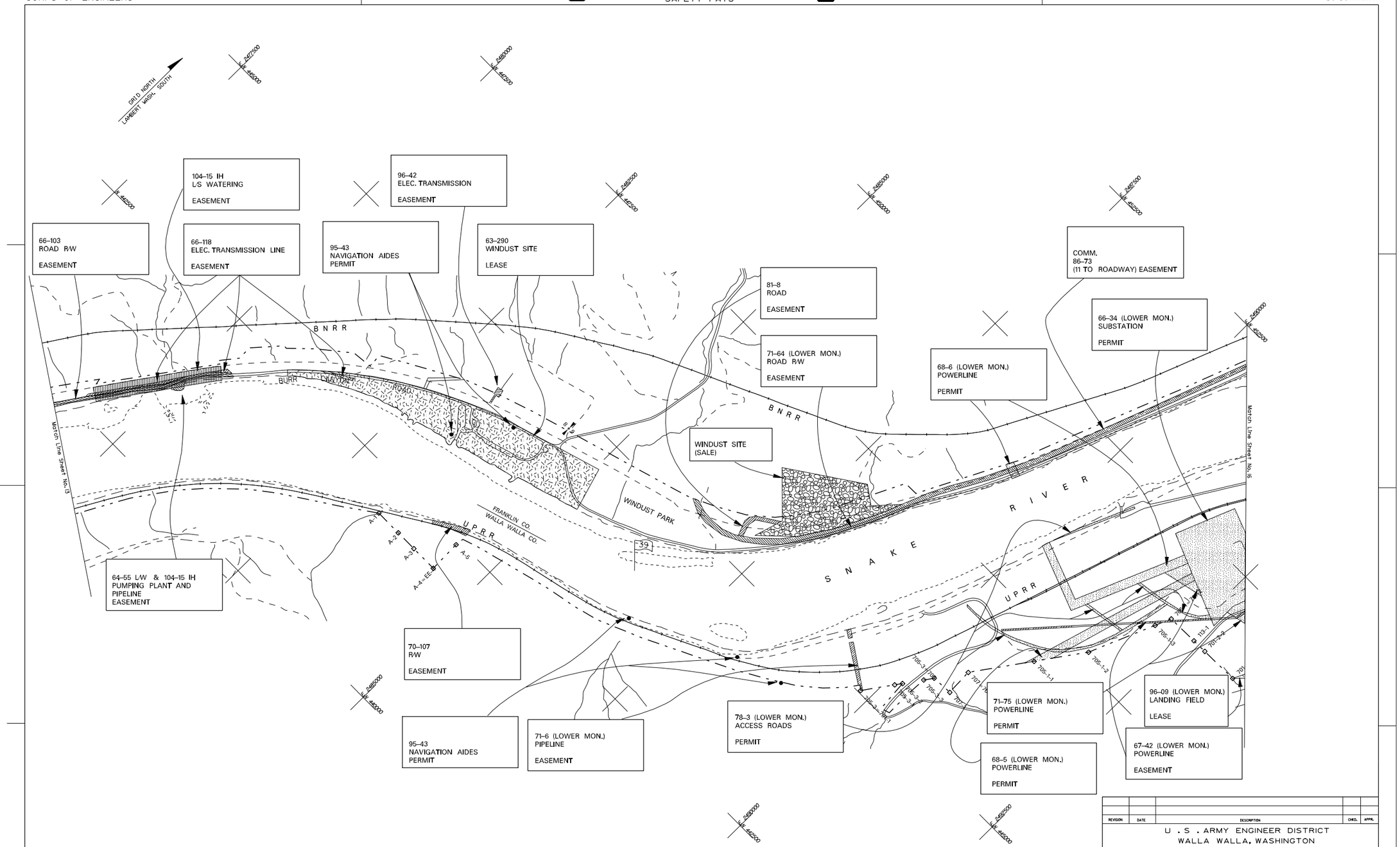

T. 12 N., R. 34 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 440)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
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PLOTTING TIME: 07-OCT-1999 11:05
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWING
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED DATE

LOWER SNAKE RIVER
ICE HARBOR RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 14 | FILE NO.

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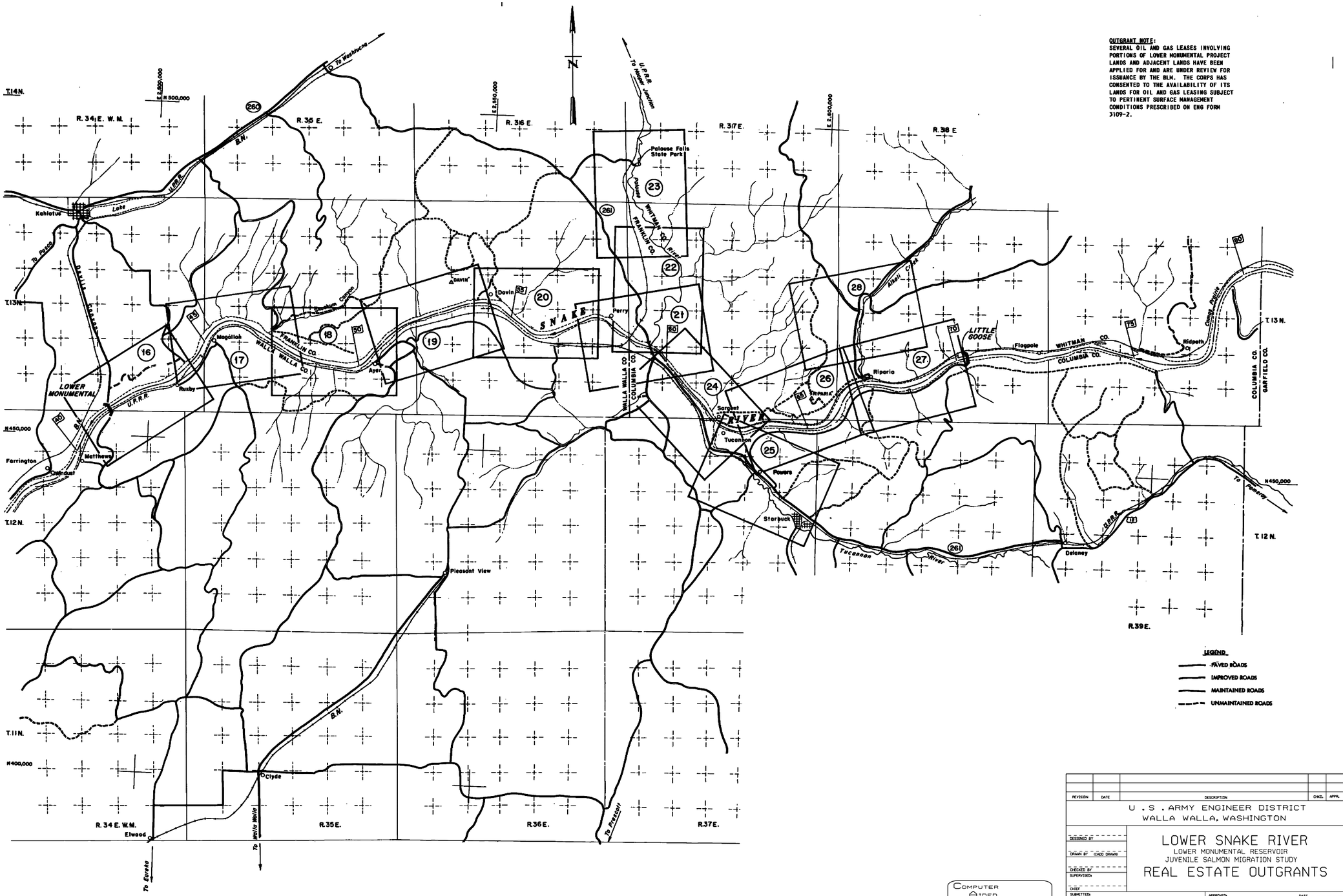

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 15 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
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PLOTTING TIME: 07-OCT-1999 12:15
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88–2
BURIED TELEPHONE CABLE
EASEMENT

96–38
POWERLINE
EASEMENT

71–64
ROAD R/W
EASEMENT

104–13
L/S WATERING
RESERVATION

DEVILS BENCH SITE
(SALE)

DEVILS BENCH PARK

LOWER MONUMENTAL DAM

69–144
POWERLINE
PERMIT

70–44
TEL. LINE
PERMIT

71–52
TEL. LINE
PERMIT
(UG)

66–34
SUBSTATION
PERMIT

67–42
POWERLINE
EASEMENT

96–9
LANDING FIELD
LEASE

71–6
L/S WATERING
EASEMENT

104–22
LIVESTOCK ACCESS
RESERVATION

71–75
POWERLINE
PERMIT

96–02
NAVIGATION AIDES
PERMIT

GRID NORTH
LAMBERT WASH. SOUTH

T. 13 N., R. 34 E. W.M.
T. 12 N., R. 34 E. WM.

B N R R

U P R R

S N A K E R I V E R

FRANKLIN CO.
WALLA WALLA CO.

Mitch Line Street No. 14

Mitch Line Street No. 17

FLOW

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 540)
NATURAL RIVER SHORELINE(APPROX.)
PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
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PLOTTING TIME: 07-OCT-1999 10:33
PLOTTING METHOD: PCPLOT

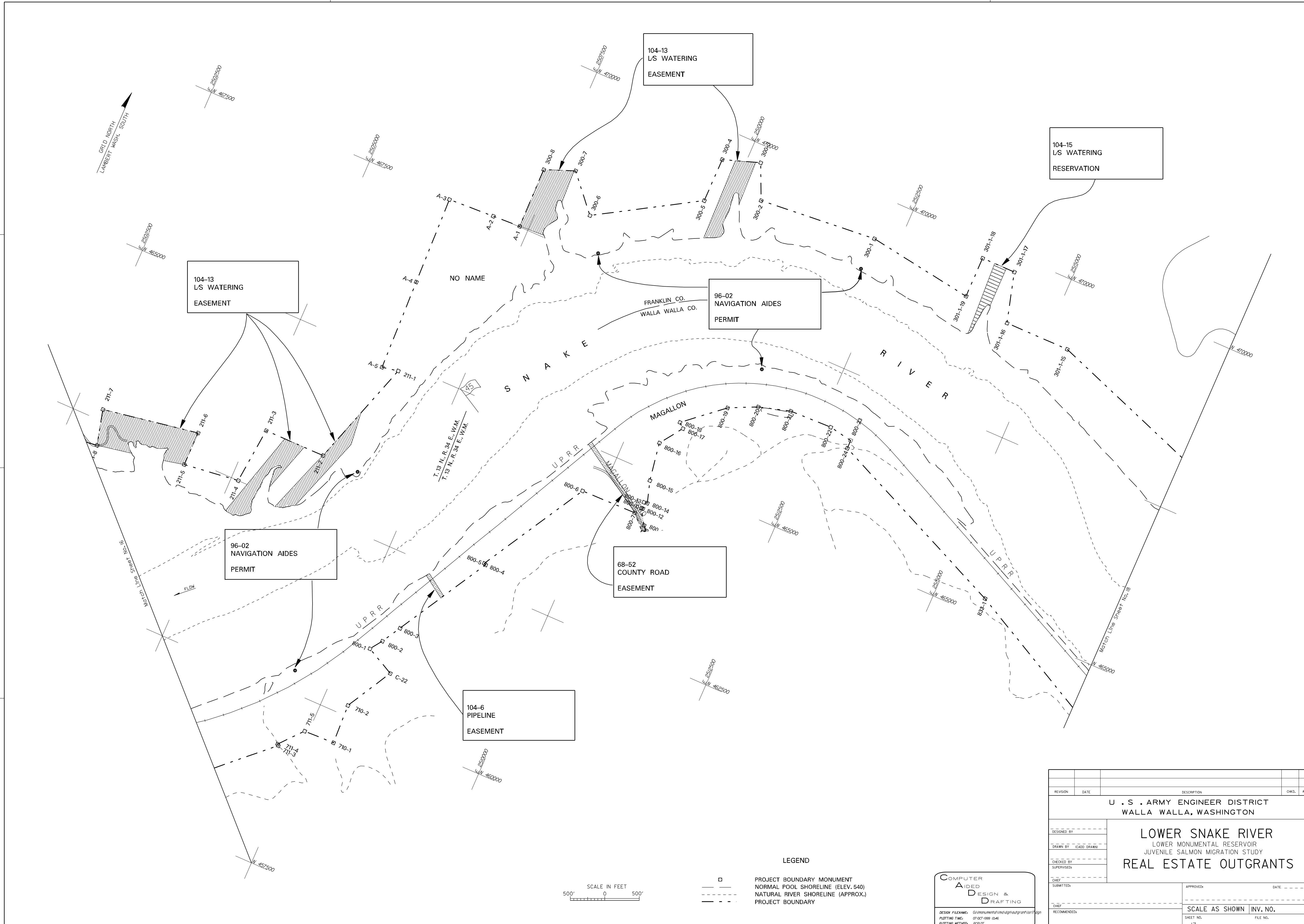
REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISOR
CHIEF

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN
INV. NO.
SHEET NO. 16
FILE NO.



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07-OCT-1999 12:46

CORPS OF ENGINEERS

SAFETY PAYS

U. S. ARMY

104-15 & 104-14
L/S WATERING

RESERVATION

96-02
NAVIGATION AIDES

PERMIT

96-02
NAVIGATION AIDES

PERMIT

81-48
LW AND ACCESS ROAD

EASEMENT

96-02
NAVIGATION AIDES

PERMIT

96-02
NAVIGATION AIDES

PERMIT

GRID NORTH
LAMBERT WASH. SOUTH

Match Line Sheet No.17

Match Line Sheet No.19

SKOOKUM HMU

SKOOKUM HMU

SKOOKUM HMU

S N A K E R I V E R

U P R R

U P R R

U P R R

FRANKLIN CO.
WALLA WALLA CO.

49

301-1-14-1A
301-1-14A
301-1-14
301-1-13
301-1-12
301-1-11
301-1-10-A
301-1-10
301-1-9-A
301-1-9
301-1-8-1A
301-1-8-C
301-1-8-1B
301-1-8-B
301-1-8-A
301-1-6
301-1-7-Q
301-1-7-B
301-1-7-A
301-1-7
301-1-6
301-1-5-A
301-1-5
301-1-4-A
301-1-4
301-1-4-B
301-1-3-A
301-1-3
301-1-2-B
301-1-2-A1
301-1-2
309-6
309-5
309-4
301-2-1
301-2-2
301-1-1-A
301-1-1
309-7
833-2
833-3
833-3-A
833-3-B
833-4
833-4-A
833-4-B
833-4-C
833-5
833-6
833-7
833-8
833-8-A
833-8-B
833-9
802-1
802-2
802-3
802-5
802-6

28 27
33 34

27 26
34 35

E 2517500 N 462500
E 2520000 N 462500
E 2522500 N 460000
E 2525000 N 460000
E 2527500 N 460000
E 2530000 N 460000
E 2532500 N 460000

SCALE IN FEET
500' 0 500'

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 540)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lmonumental\lma\dgn\outgrant\ar18.dgn
PLOTTING TIME: 07-OCT-1999 10:52
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWD
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 18 | FILE NO.

VALUE ENGINEERING PAYS

REFERENCE FILES ATTACHED

LEVELS ON FOR CONTRACT DRWGS

SCALE

G:\lmonumental\lma\dgn\outgrant\ls
07-OCT-1999 12:52

80-28
L/S WATERING
RESERVATION

104-10
L/S WATERING
RESERVATION

96-02
NAVIGATION AIDS
PERMITS

96-02
NAVIGATION AIDS
PERMIT

68-52
ROAD R/W
EASEMENT

GRID NORTH
LAMBERT WASH. SOUTH

S N A K E R I V E R

FRANKLIN CO.
WALLA WALLA CO.

AYER BOAT BASIN

AYER ROAD

CASEY ROAD

U P R R

AYER HMU

FLOW

Match Line Sheet No. 18

Match Line Sheet No. 20

T. 13 N., R. 35 E., W.M.
T. 13 N., R. 36 E., W.M.

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 540)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lmonumental\lma\dgn\outgrant\ardgn
PLOTTING TIME: 07-OCT-1999 12:58
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF
SCALE AS SHOWN
INV. NO.
SHEET NO. 19
FILE NO.

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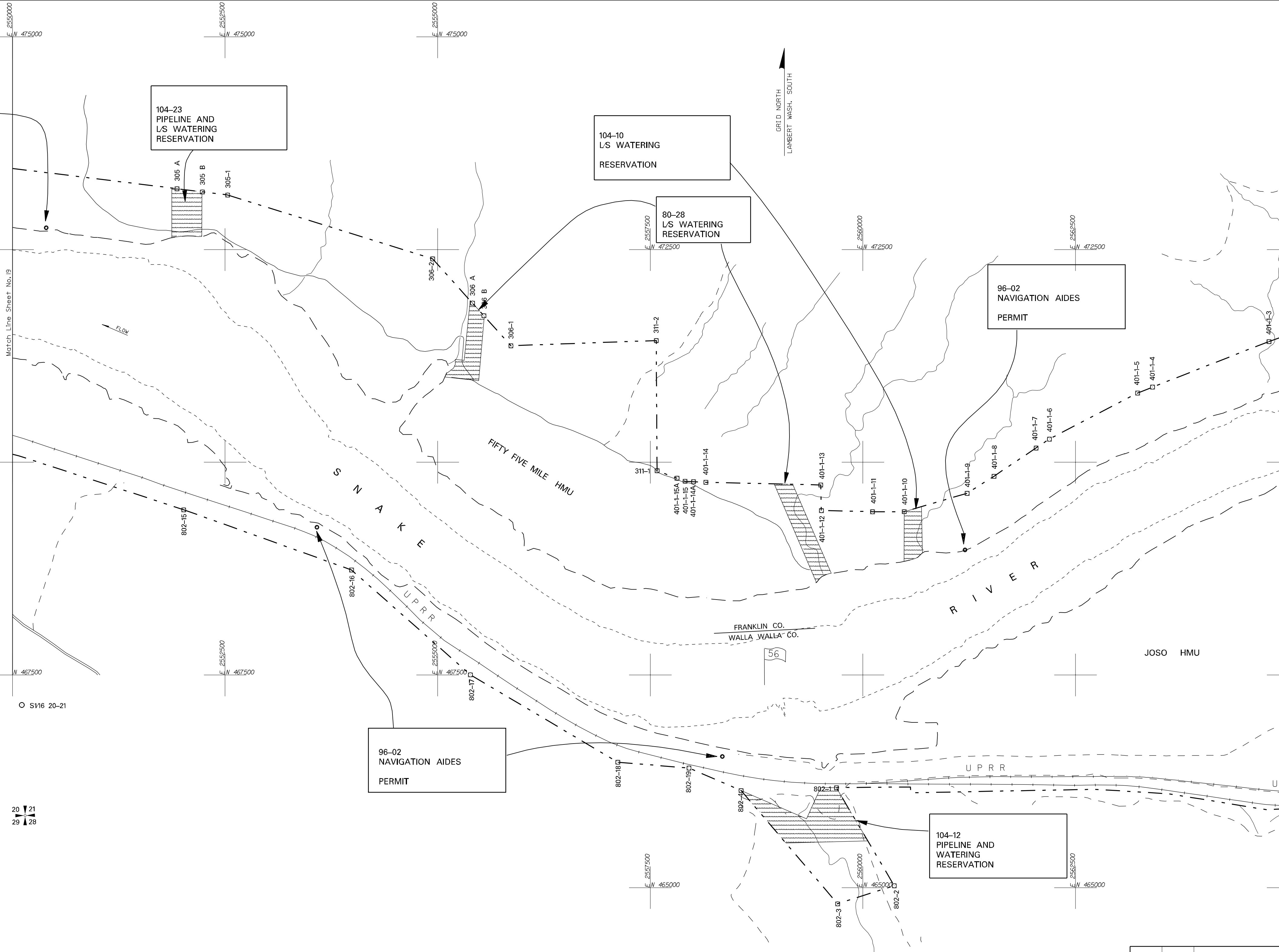
07-OCT-1999 12:58



LEGEND

◘	PROJECT BOUNDARY MONUMENT
— —	NORMAL POOL SHORELINE (ELEV. 540)
- - - - -	NATURAL RIVER SHORELINE (APPROX.)
— - -	PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\monumental\lma\dgn\outgrant\lsr20.dgn
PLOTTING TIME: 07-OCT-1999 13:05
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED:
CHIEF

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED:
CHIEF
RECOMMENDED:
CHIEF
APPROVED: DATE
SCALE AS SHOWN INV. NO.
SHEET NO. 20 FILE NO.

REVISED BLK DATE NOV.27 85

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lmonumental\lma\dgn\outgrant\ls
07-OCT-1999 13:05

97–74
LYONS FERRY STATE PARK
LEASE

67–71
ROAD R/W
EASEMENT

71–68
POWERLINE
EASEMENT

96–02
NAVIGATION AIDES
PERMIT

96–23
EASEMENT – ROAD & WELL

70–82
POWERLINE
EASEMENT

72–87
ST. HWY. SR–261
EASEMENT

72–36
ROAD R/W
EASEMENT

69–144
POWERLINE
PERMIT

92–2
LYONS FERRY MARINA
LEASE

95–42
L/S WATERING
EASEMENT

71–68
POWERLINE
EASEMENT

96–02
NAVIGATION AIDES
PERMIT

LAMBERT WASH. SOUTH GRID NORTH

Match Line Sheet No. 22

Match Line Sheet No. 24

Match Line Sheet No. 20

LYONS FERRY FISH HATCHERY

PALOUSE RIVER

PALOUSE HMU

JOSO HMU

JOSO EAST HMU

S N A K E R I V E R

FRANKLIN CO.
WALLA WALLA CO.
COLUMBIA CO.
WHITMAN CO.

U P R R

R R

HWY 261

FLOW

T. 13 N., R. 37 E. W.M.
T. 13 N., R. 36 E. W.M.

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 540)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\monumental\lma\dgn\outgrant\sr2.dgn
PLOTTING TIME: 18-NOV-1999 13:34
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY (SUPERVISOR)
CHIEF

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED: CHIEF
APPROVED: DATE
RECOMMENDED: CHIEF
SCALE AS SHOWN | INV. NO.
SHEET NO. 21 | FILE NO.

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 540)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\monumental\lmd\dgn\outgrant\ar22.dgn
PLOTTING TIME: 07-OCT-1999 13:22
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

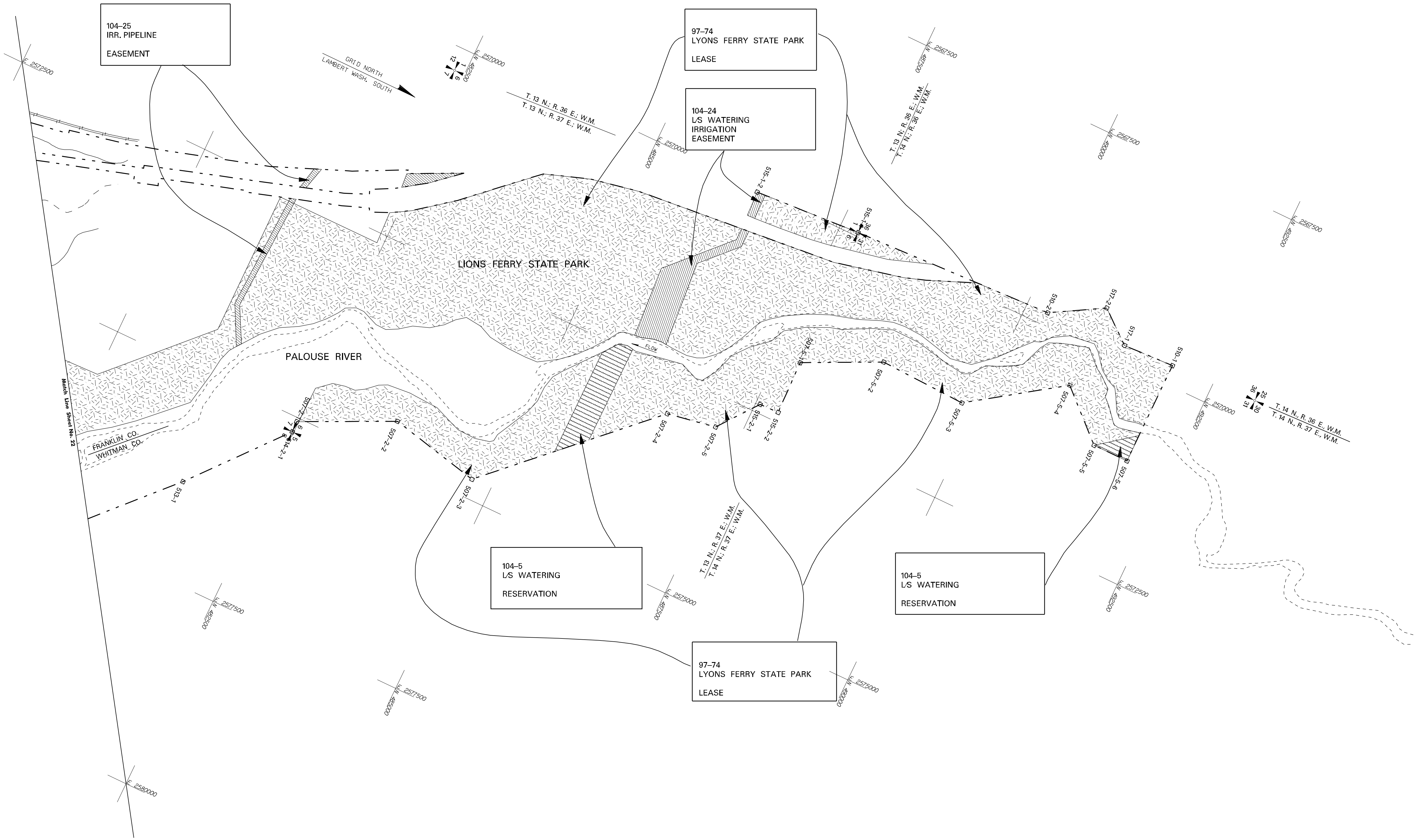
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 22 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lmonumental\lma\dgn\outgrant\la
07-OCT-1999 13:22



LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 540)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED:
CHIEF
SUBMITTED:
CHIEF
RECOMMENDED:
CHIEF

LOWER SNAKE RIVER

LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY

REAL ESTATE OUTGRANTS

APPROVED: DATE

SCALE AS SHOWN | INV. NO.
SHEET NO. 23 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE
G:\monumental\lma\dgn\outgrant\la
07-OCT-1999 13:33

LAMBERT MASIL SOUTH
GRID NORTH

104–16
L/S WATERING AND ROAD ACCESS
RESERVATION

69–144 & 71–75
POWERLINE
PERMIT

70–89
PIPELINE R/W
EASEMENT

72–31
PIPELINE
EASEMENT

104–16
L/S WATERING
RESERVATION

70–65
ACCESS ROAD
PERMIT
JOINT
95–16
ACCESS ROAD
LICENSE

104–16 & 104–17
L/S WATERING
RESERVATION

Match Line Sheet No. 26

SARGENT HMU

WHITMAN CO.
COLUMBIA CO.

Sargent Bridge

T.13 N. R.37 E.W.M.
T.14 N. R.37 E.W.M.

S N A K E R I V E R

TUCANNON HMU

Match Line Sheet No. 25

Match Line Sheet No. 27

FLOW

96–02
NAVIGATION AIDES
PERMIT

104–21
L/S WATERING
RESERVATION

96–02
NAVIGATION AIDES
PERMIT

72–87
ST. HWY. SR. 261
EASEMENT

72–31
PIPELINE
EASEMENT

72–87
ST. HWY. SR 261
EASEMENT

SALE

70–89
PIPELINE R/W
EASEMENT

70–82
POWERLINE
EASEMENT

SCALE IN FEET
500′ 0 500′

LEGEND
- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV 540)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
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PLOTTING TIME: 07-OCT-1999 13:43
PLOTTING METHOD: PCPLOT

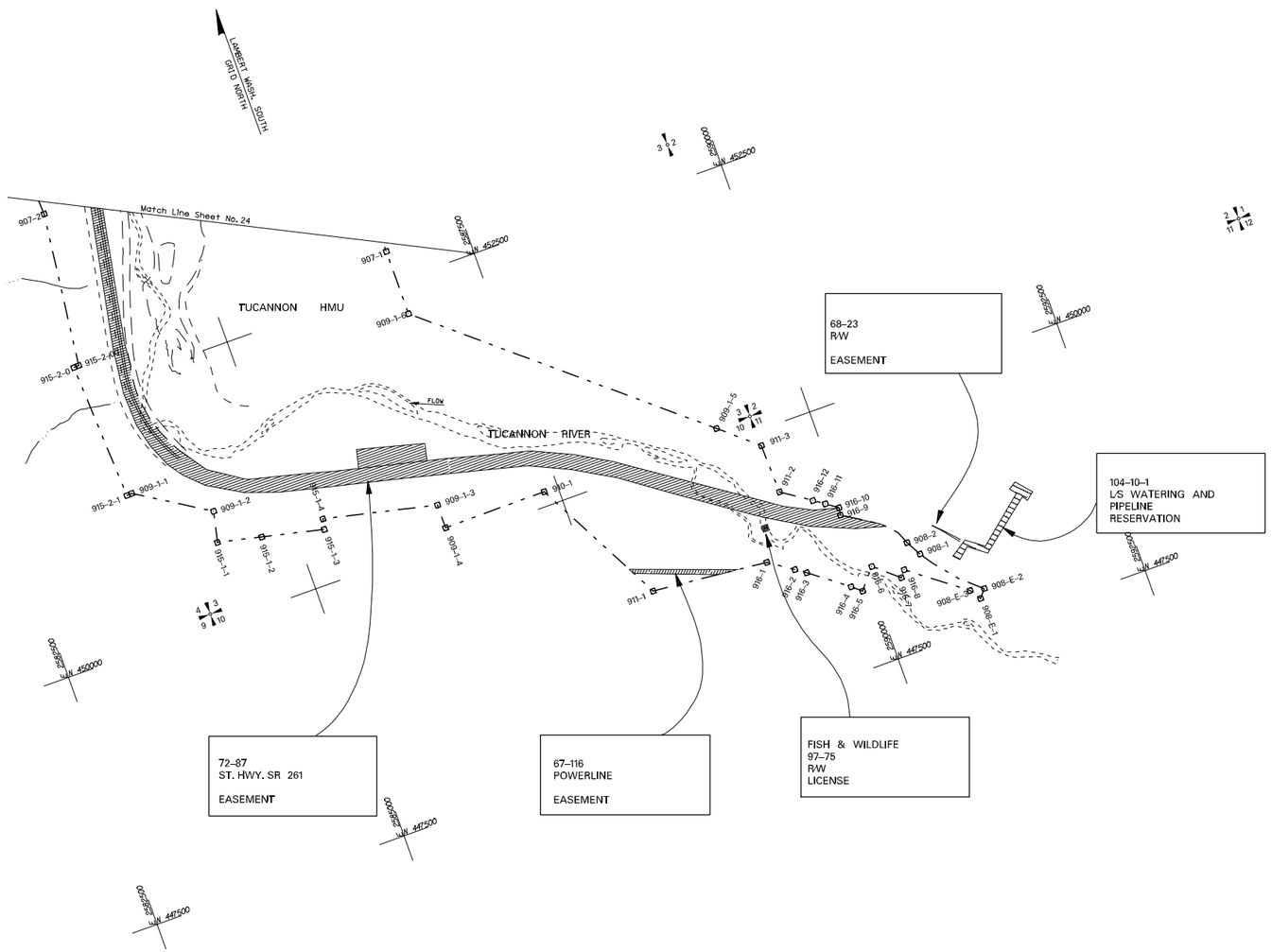
REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 24 | FILE NO.



SCALE IN FEET
500′ 0 500′

LEGEND

⊠	PROJECT BOUNDARY MONUMENT
— —	NORMAL POOL SHORELINE (ELEV. 540)
- - - - - - -	NATURAL RIVER SHORELINE (APPROX.)
— - -	PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lmonumental\lma\dgn\outgrant\lr25.dgn
PLOTTING TIME: 07-OCT-1999 13:51
PLOTTING METHOD: PEPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

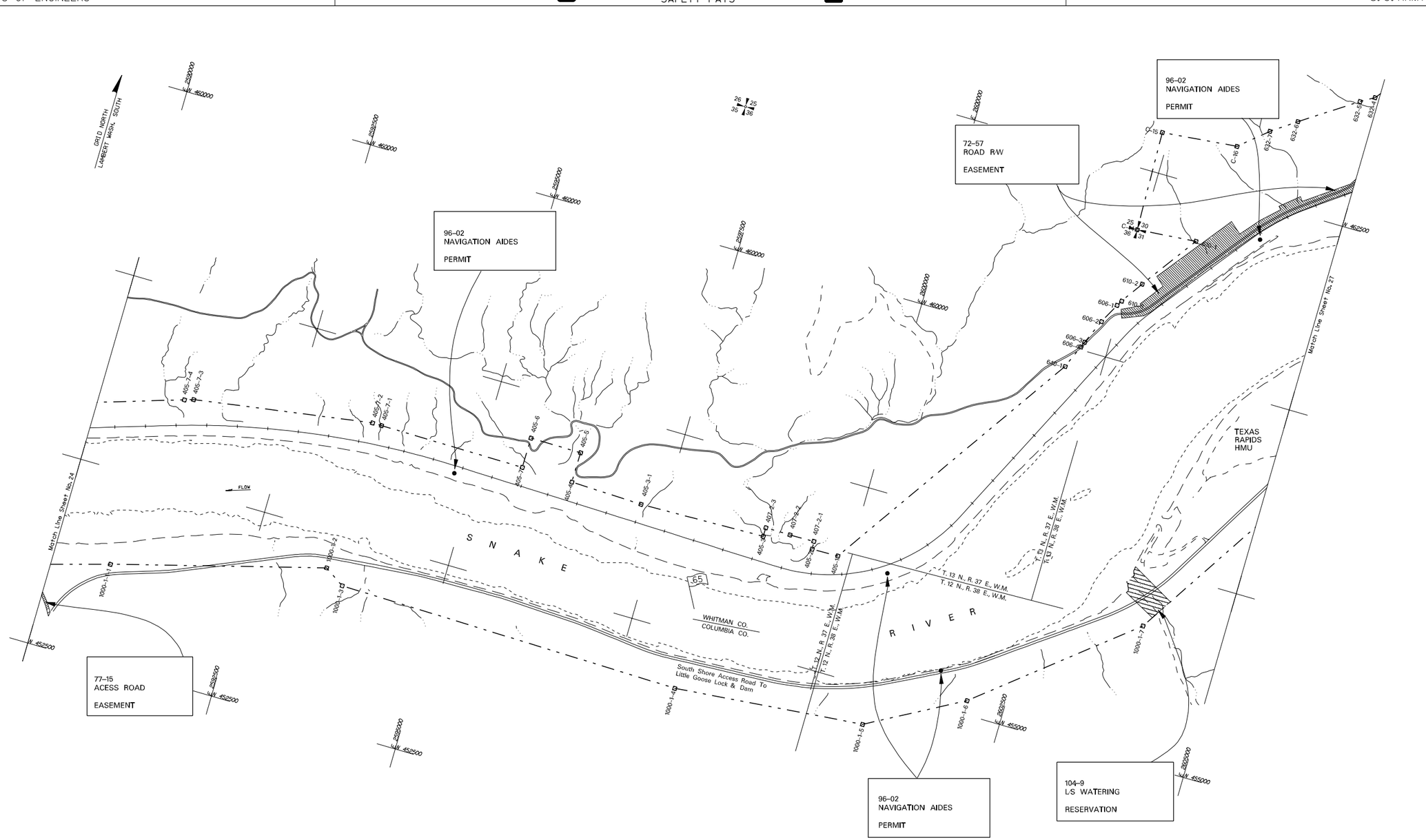
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 25 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lmonumental\lma\dgn\outgrant\lr25.dgn 07-OCT-1999 13:51



SCALE IN FEET
500′ 0 500′

LEGEND
PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 540)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\monumental\lma\dgn\outgrant\la.dgn
PLOTTING TIME: 07-OCT-1999 13:56
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 26 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lmonumental\lma\dgn\outgrant\la
07-OCT-1999 13:56

69–144 & 71–75
POWERLINE
PERMIT

71–68
POWERLINE
EASEMENT

72–57
ROAD R/W
EASEMENT

96–02
NAVIGATION AIDES
PERMIT

72–18
TELEPHONE LINE
EASEMENT

69–78 & 96–35
ACCESS ROAD
PERMIT
JOINT
DACW68–2–70–71
ACCESS ROAD
EASEMENT

69–11
SUBSTATION
PERMIT

71–75
POWERLINE
PERMIT

71–34
ACCESS ROAD
PERMIT

70–23 (LITTLE GOOSE)
POWERHOUSE LINE
PERMIT

104–15 (LITTLE GOOSE)
LIVESTOCK WATER
RESERVATION

71–12 (LITTLE GOOSE)
UNDERGROUND CABLES
PERMIT

76–82
POWERLINE
PERMIT

96–02
NAVIGATION AIDES
PERMIT

104–10–1
L/S WATERING
RESERVATION

96–02
NAVIGATION AIDES
PERMIT

96–33
ROAD R/W
EASEMENT

104–10
L/S WATERING
RESERVATION

76–32 (LITTLE GOOSE)
POWERLINE
ACCESS ROAD
PERMIT

71–96 (LITTLE GOOSE)
TRAN. LINE AND ACCESS ROAD
PERMIT

73–123 (LITTLE GOOSE)
ELEC. TRANS. LINES AND
SUBSTATION
EASEMENT

73–40 (LITTLE GOOSE)
ROAD
EASEMENT

ALKALI FLAT CREEK HMU
RIPARIA HMU
HENLEY HMU
TEXAS RAPIDS HMU
SNAKE RIVER
FLOW
WHITMAN CO.
COLUMBIA CO.
GRID NORTH
LAMBERT WASH. SOUTH
Match Line Sheet No. 26
Match Line Sheet No. 28
Match Line Sheet No. 30
68

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 540)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\monumental\lma\dgn\outgrant\sr27.dgn
PLOTTING TIME: 07-OCT-1999 14:07
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

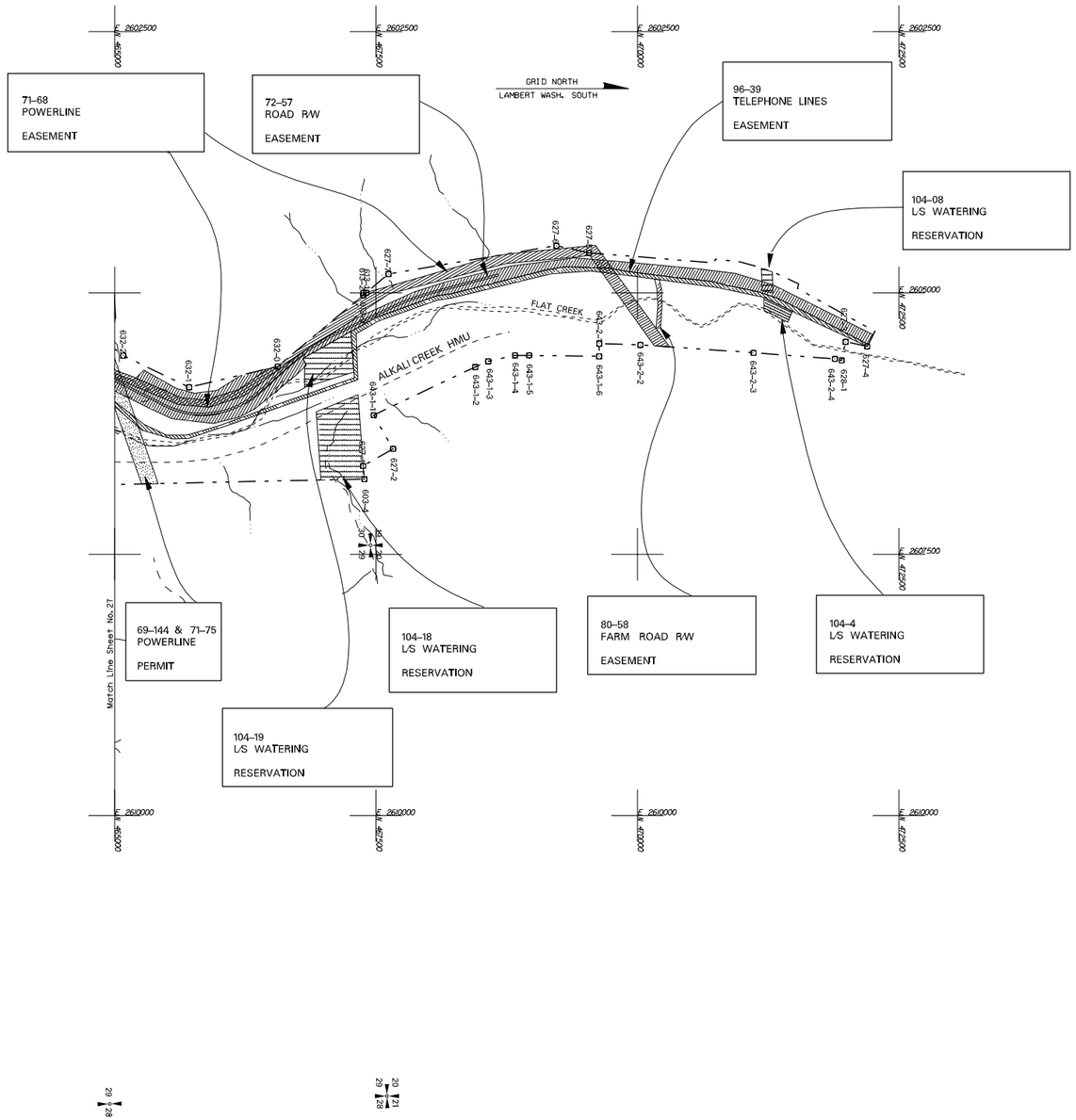
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 27 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lmonumental\lma\dgn\outgrant\la
07-OCT-1999 14:07



LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 540)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\monumental\ma\dgn\outgrant\sr28.dgn
PLOTTING TIME: 07-OCT-1999 14:20
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

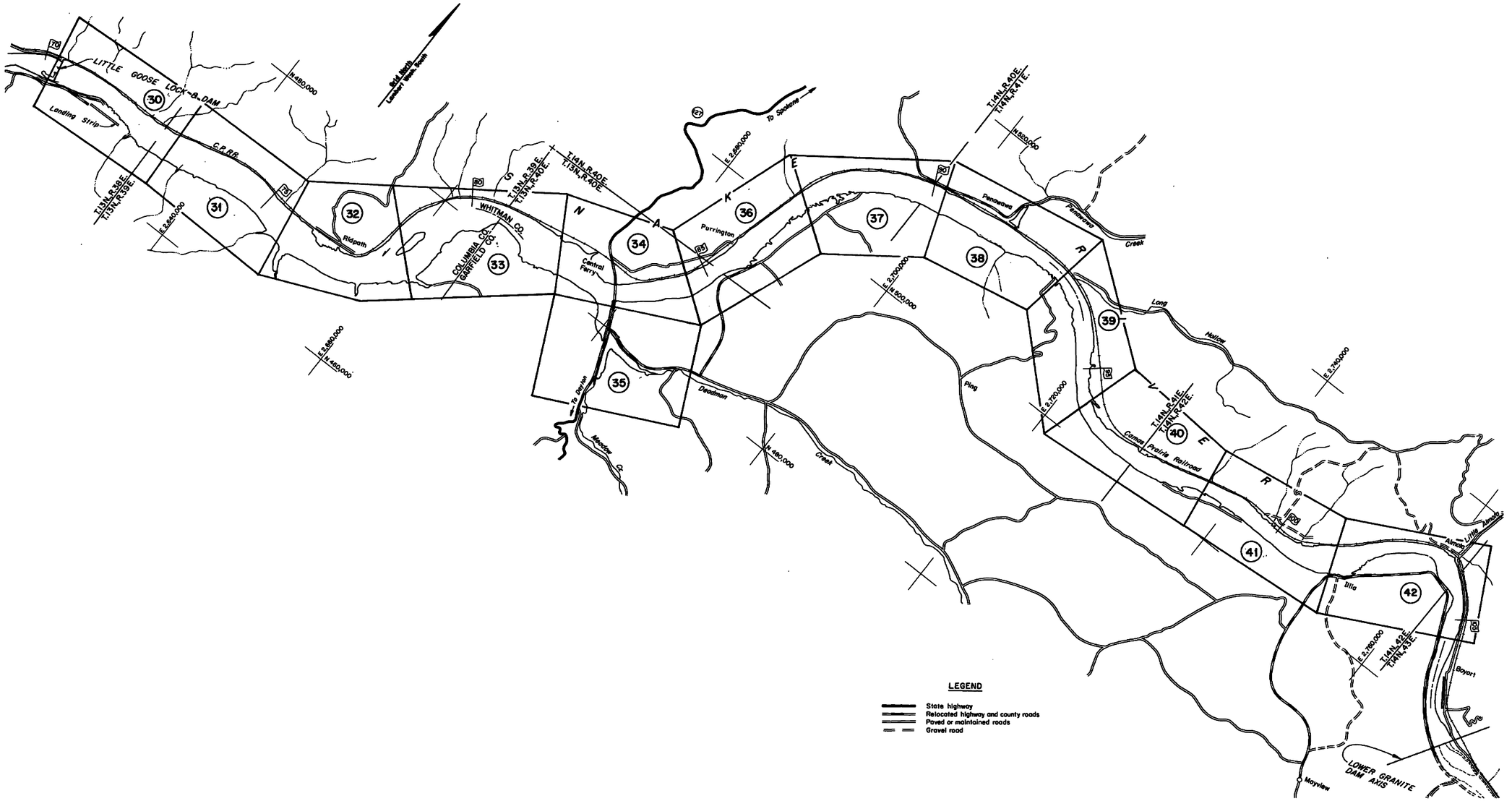
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED:
CHIEF

LOWER SNAKE RIVER
LOWER MONUMENTAL RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED:
CHIEF
RECOMMENDED:
CHIEF
APPROVED:
DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 28 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lmonumental\lma\dgn\outgrant\lg 07-OCT-1999 14:21



REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF

SCALE AS SHOWN | INV. NO.
SHEET NO. 29 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr29.dgn
PLOTTING TIME: 07-OCT-1999 14:30
PLOTTING METHOD: PCPLOT

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lga\dgn\outgrant\lsr29.d
07-OCT-1999 14:30

GRID NORTH
LAMBERT WASH. SOUTH

71–12
UNDERGROUND CABLE
PERMIT

GAS LEASE
84–15

95–35
NAVIGATION AIDES
PERMIT

97–72
AIRCRAFT LANDING FIELD
LEASE

70–23
POWERHOUSE LINE
PERMIT

73–40
ROAD R/W
EASEMENT

104–4
L/S WATERING ACCESS
EASEMENT

73–123
ELEC. TRANS LINE AND
SUBSTATION
EASEMENT

104–1
ROAD ACCESS
RESERVATIONS

171–92
NAT. FISH. SERVICE LAB.
EASEMENT

LITTLE GOOSE DAM
LITTLE GOOSE RECREATION AREA HMU
FLAGPOLE GULCH HMU
Juvenile Fish Facility
WHITMAN CO.
COLUMBIA CO.
T. 13 N., R. 38 E. W.M.
T. 13 N., R. 39 E. W.M.
Match Line Sheet No. 27
Match Line Sheet No. 31

T. 13 N., R. 38 E., W.M.

SCALE IN FEET
500′ 0 500′

LEGEND
- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 638)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr30.dgn
PLOTTING TIME: 18-NOV-1999 12:16
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

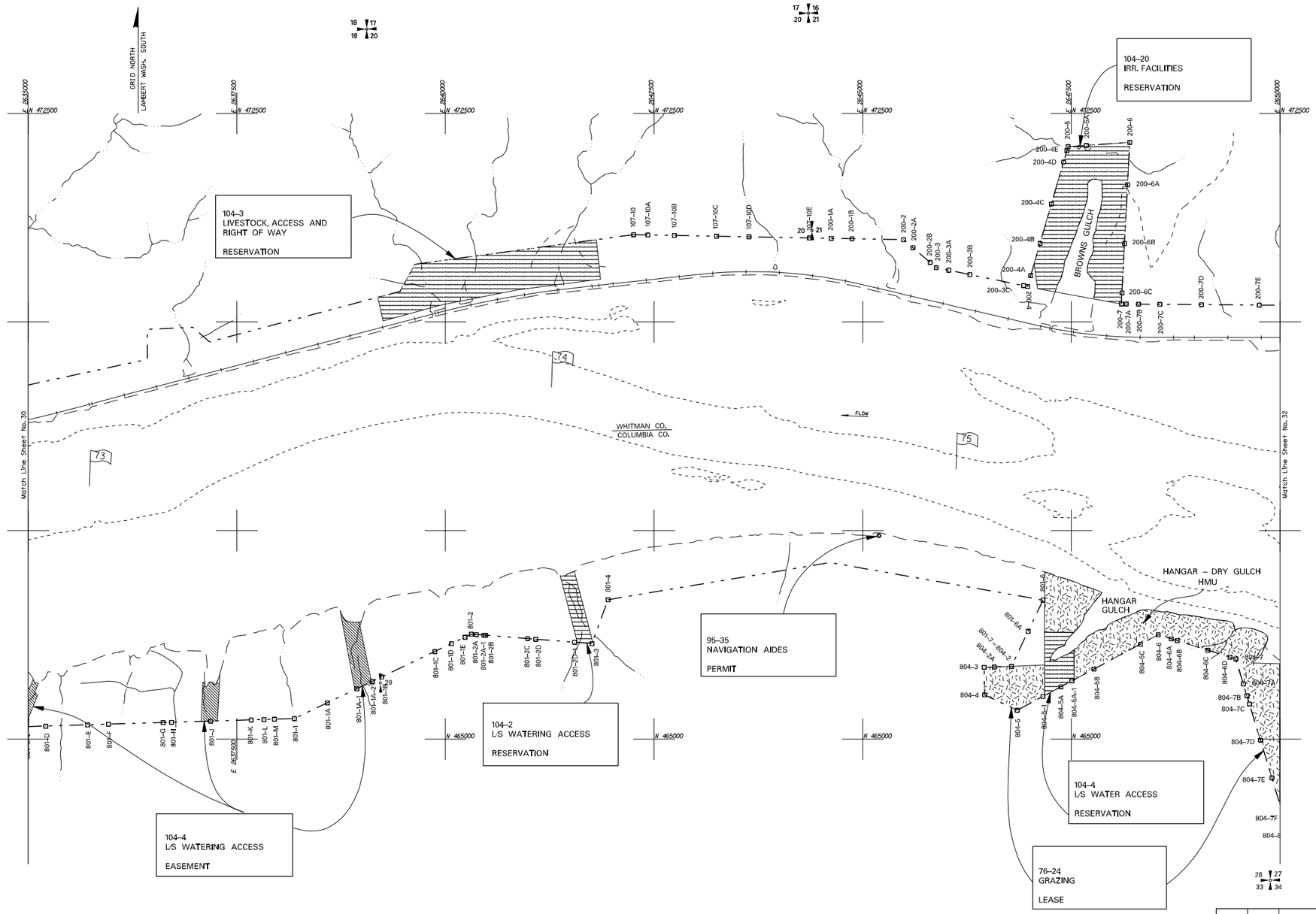
DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

SCALE AS SHOWN | INV. NO.
SHEET NO. 30 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lgoose\lga\dgn\outgrant\lsr30.dgn 18-NOV-1999 12:16



T.13 N., R. 39 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 638)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr31.dgn
PLOTTING TIME: 07-OCT-1999 15:02
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

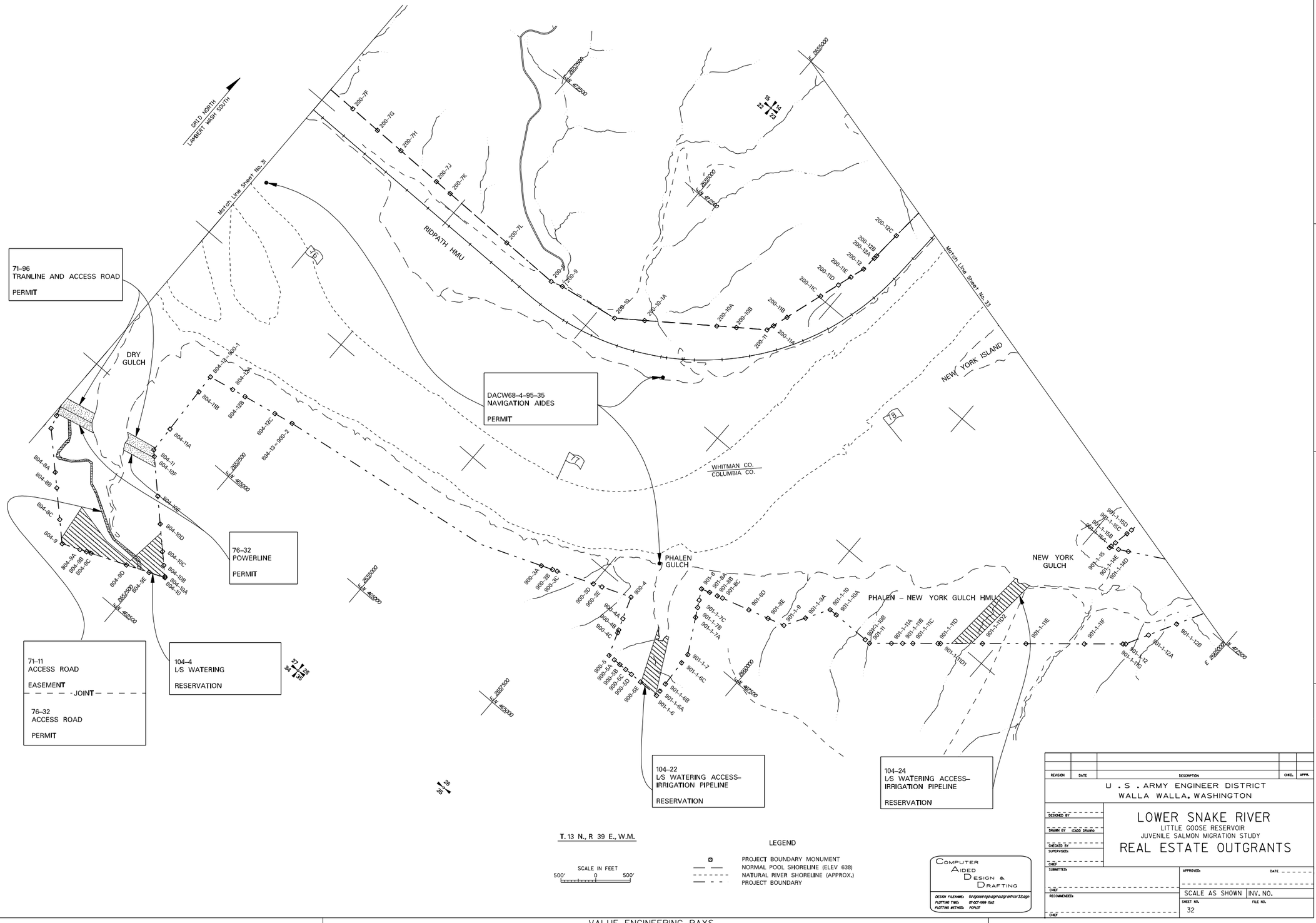
U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWD
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 31 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lgoose\lga\dgn\outgrant\lsr31.dg 07-OCT-1999 15:02



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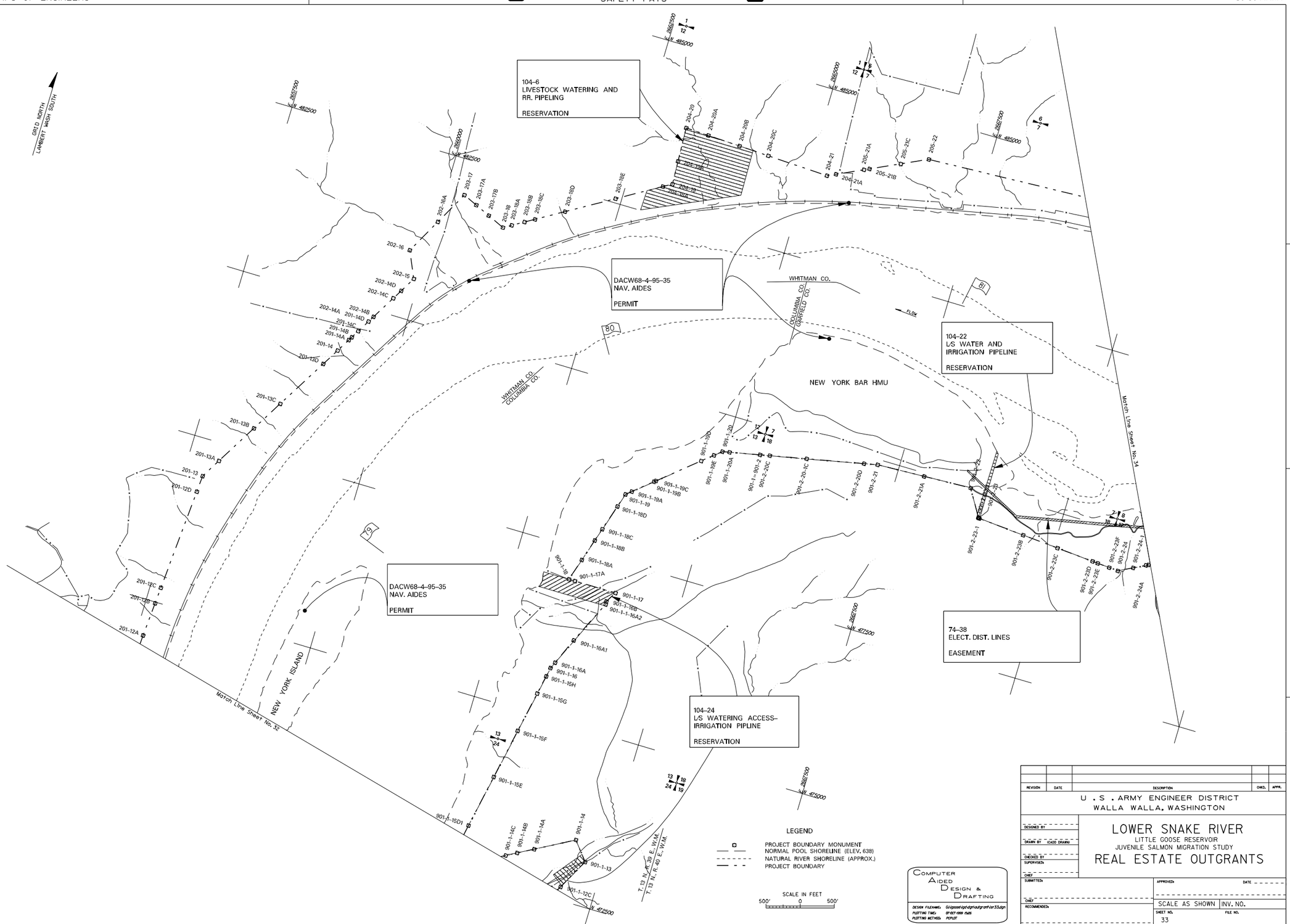


COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr33.dgn
PLOTTING TIME: 07-OCT-1999 15:26
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN
INV. NO.
SHEET NO. 33
FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lga\dgn\outgrant\lsr33.dgn 07-OCT-1999 15:26

71–61
TELE CABLE
EASEMENT

74–38
POWERLINE
EASEMENT

104–22
PUMPING PLANT AND PIPELINE
EASEMENT

72–32
ROAD R/W
EASEMENT

SALE

75–1
STATE PARK
LEASE

DACW68–2–83–27
RIGHT OF WAY
EASEMAENT

DACW68–2–74–38
RIGHT OF WAY
EASEMENT

74–38
POWERLINE
EASEMENT

74–38
ELECT. DIST. LINES
EASEMENT

104–24
L/S WATERING AND
IRRIGATION WATER
RESERVATION

104–22
L/S WATERING
RESERVATION

DACW68–4–35
NAV AIDES
PERMIT

104–7
L/S WATERING
RESERVATION

CENTRAL FERRY
STATE PARK

WHITMAN CO.
GARFIELD CO.

FLOW

GRID NORTH
LAMBERT ANGL. SOUTH

T. 14 N., R. 40 E., W.M.
T. 13 N., R. 40 E., W.M.

Match Line Sheet No. 33

Match Line Sheet No. 35

Match Line Sheet No. 36

LEGEND
- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 638)
- NATURAL RIVER SHORELINE(APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr34.dgn
PLOTTING TIME: 08-OCT-1999 07:40
PLOTTING METHOD: POPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

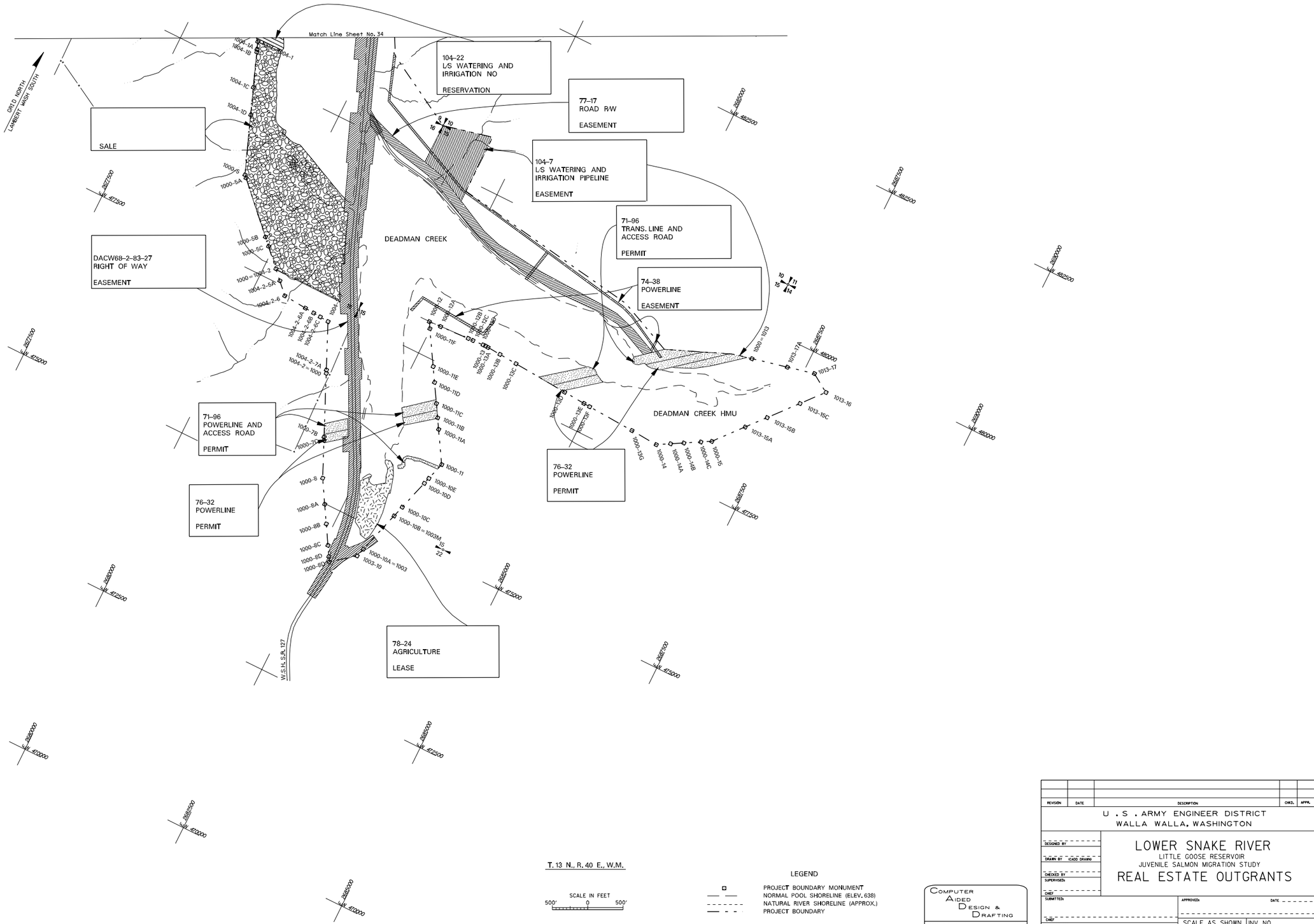
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

DESIGNED BY
DRAWN BY ICADD DRAWG
CHECKED BY
SUPERVISED:
CHIEF
SUBMITTED:
CHIEF
RECOMMENDED:
CHIEF
APPROVED: DATE

SCALE AS SHOWN | INV. NO.
SHEET NO. 34 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lgoose\lga\dgn\outgrant\lsr34.dgn 08-OCT-1999 07:40



COMPUTER AIDED DESIGN & DRAFTING

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PLOTTING TIME: 08-OCT-1999 07:57
PLOTTING METHOD: PSPLOT

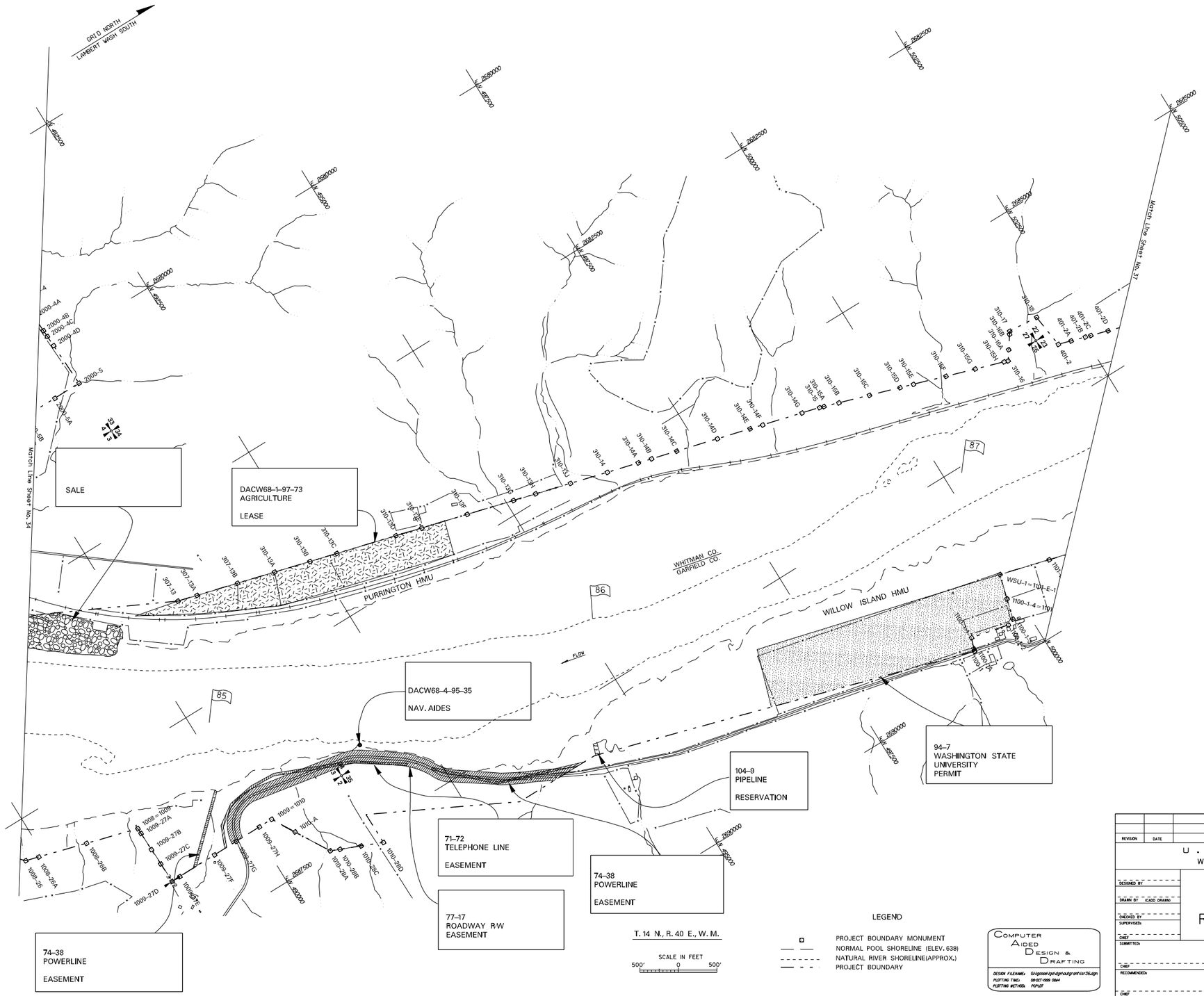
REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWING
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 35 | FILE NO.



REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

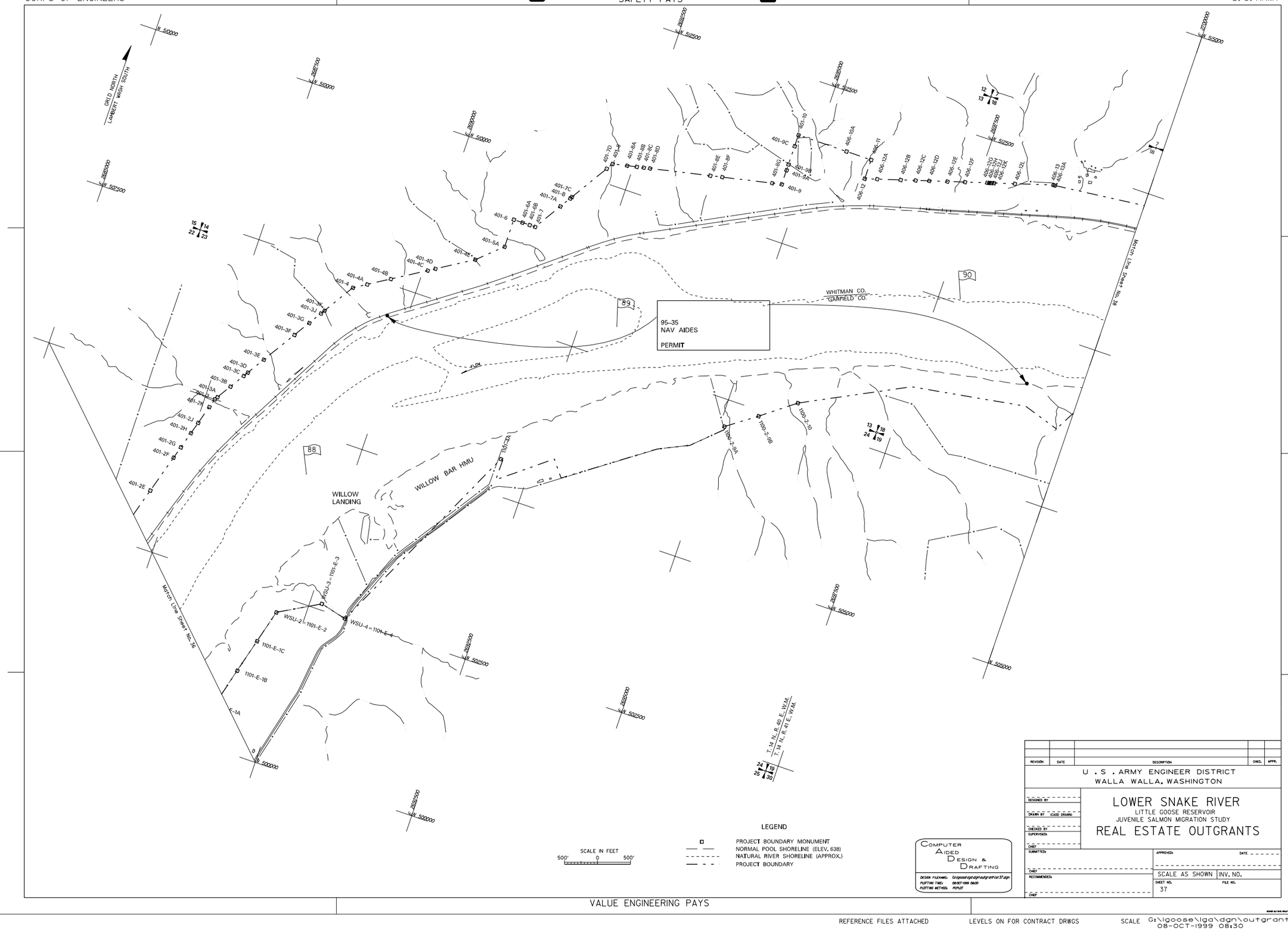
LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr36.dgn
PLOTTING TIME: 08-OCT-1999 08:14
PLOTTING METHOD: PCPLOT

SCALE AS SHOWN | INV. NO.
SHEET NO. 36 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lga\dgn\outgrant\lsr36.dgn 08-OCT-1999 08:14

CORPS OF ENGINEERS | SAFETY PAYS | U. S. ARMY



LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 638)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lgd\outgrant\lsr37.dgn
PLOTTING TIME: 08-OCT-1999 08:30
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

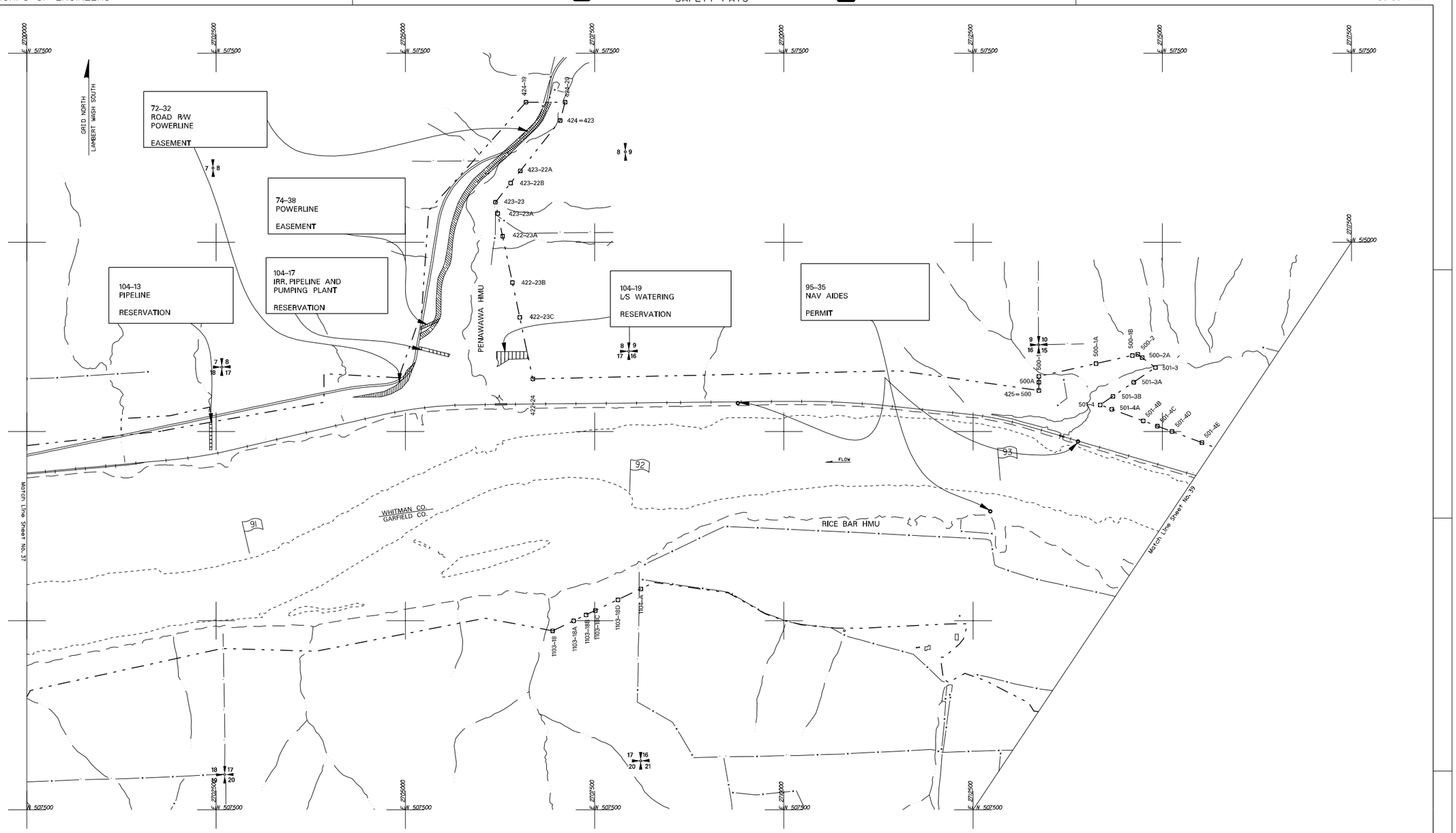
LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF

SCALE AS SHOWN | INV. NO.
SHEET NO. 37 | FILE NO.

VALUE ENGINEERING PAYS

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lgoose\lgd\dgn\outgrant\lsr37.dgn 08-OCT-1999 08:30



T. 14 N., R 41 E., W.M.

SCALE IN FEET
500′ 0 500′

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 638)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr38.dgn
PLOTTING TIME: 08-OCT-1999 08:41
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

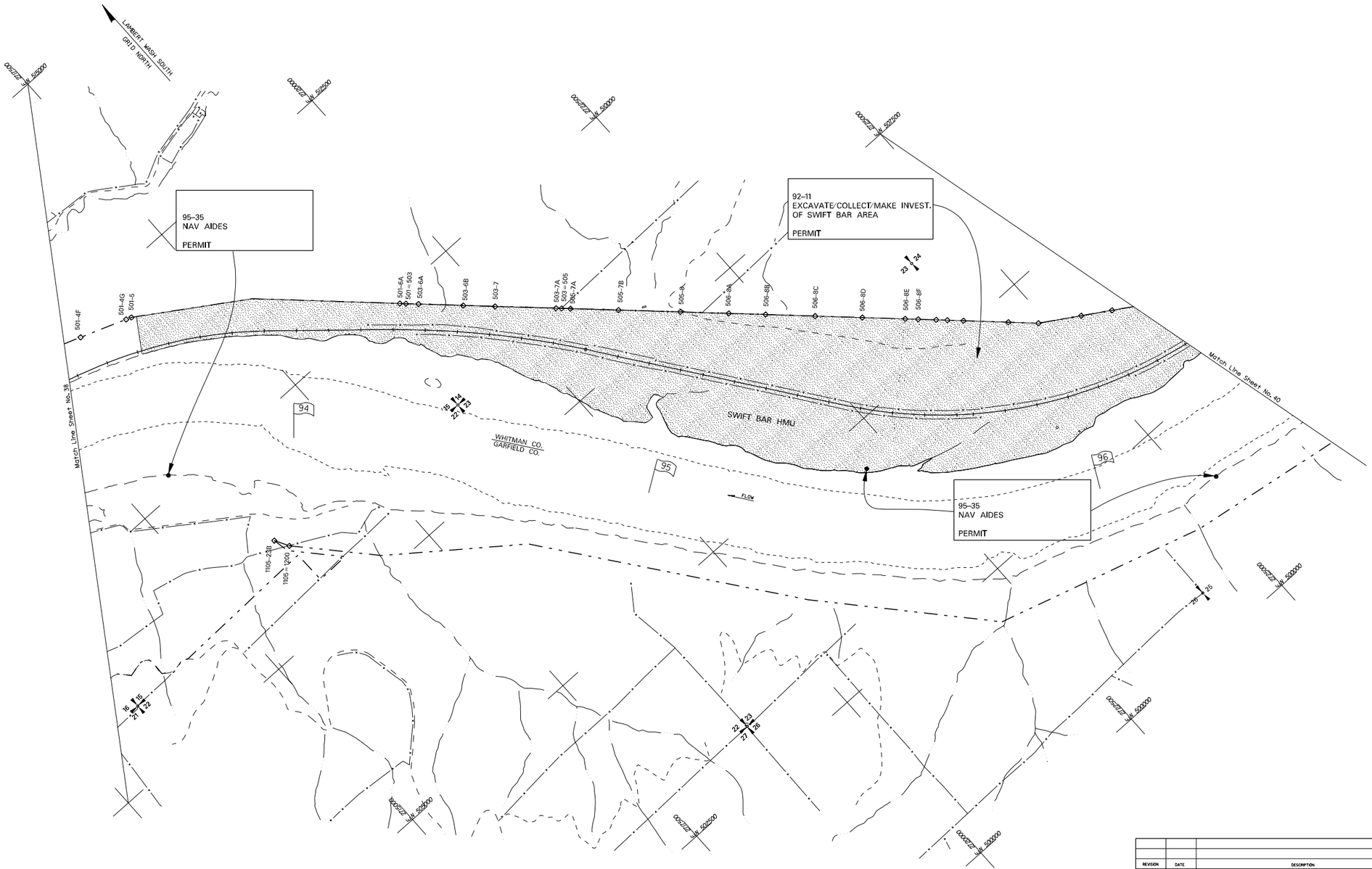
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAFTR)
CHECKED BY
SUPERVISOR
CHIEF
SUBMITTED: APPROVED: DATE
CHIEF
RECOMMENDED:
CHIEF

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 38 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lga\dgn\outgrant\lsr38.d
08-OCT-1999 08:41



T. 14 N., R. 41 E., W.M.

SCALE IN FEET
500' 0 500'

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 638)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr39.dgn
PLOTTING TIME: 08-OCT-1999 08:52
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISOR
CHIEF

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 39 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lga\dgn\outgrant\lsr39.dg
08-OCT-1999 08:52

GRID NORTH
LAMBERT WASH SOUTH

92–11
EXCAVATE/COLLECT/MAKE INVEST. OF SWIFT BAR AREA

PERMIT

95–35
NAV AIDES

PERMIT

104–14
L/S WATERING

RESERVATION

104–12
L/S WATERING PUMP AND PUMPING PLANT

RESERVATION

SWIFT BAR HMU

SCHULTZ BAR HMU

BECKWITH BAR HMU

WHITMAN CO.
GARFIELD CO.

T. 14 N., R. 41 E., W.M.
T. 14 N., R. 42 E., W.M.

Match Line Sheet No. 39

Match Line Sheet No. 41

LEGEND

PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 638)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgoose\lgd\outgrant\lsr40.dgn
PLOTTING TIME: 08-OCT-1999 09:18
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

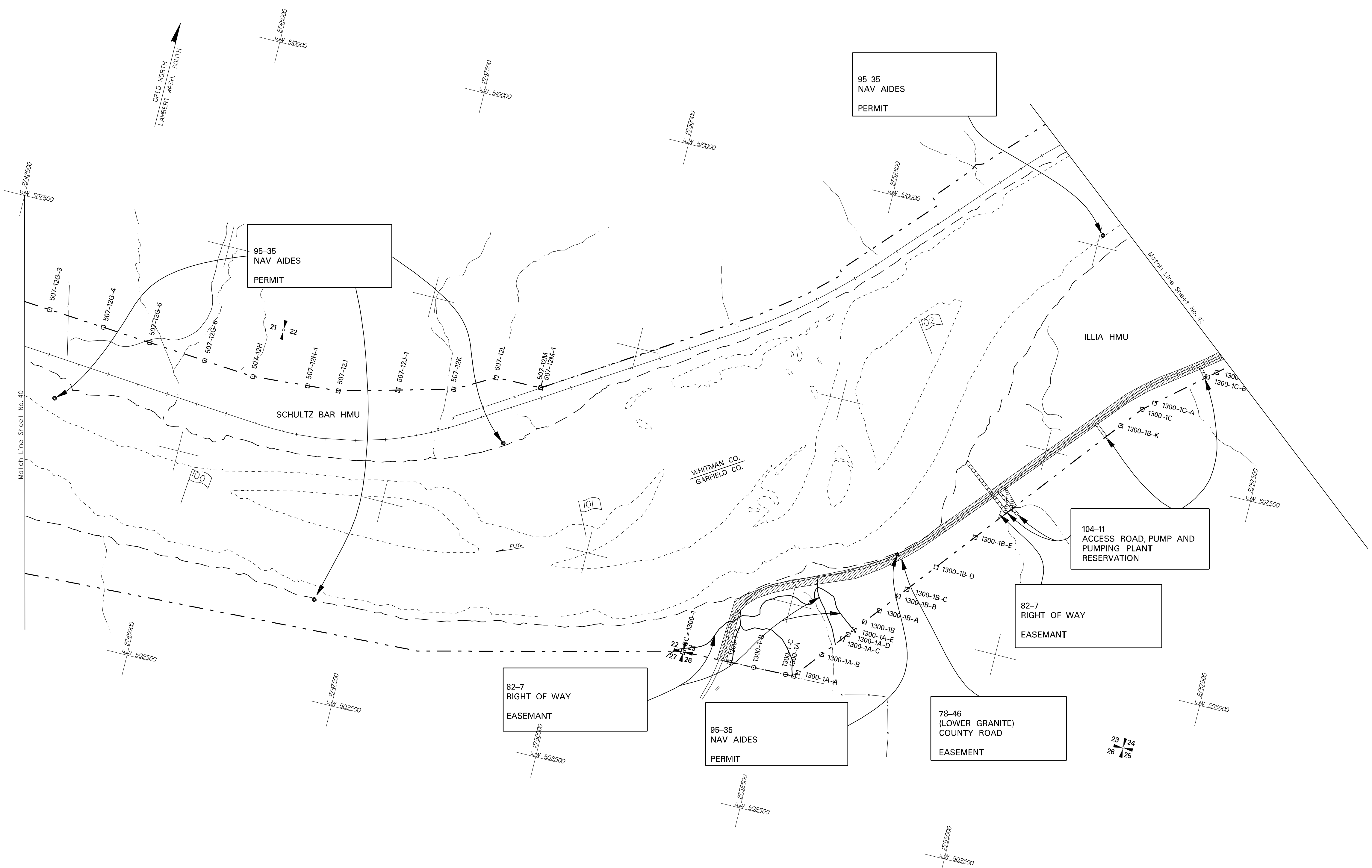
LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

SCALE AS SHOWN | INV. NO.
SHEET NO. 40 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lgd\dgn\outgrant\lsr40.d
08-OCT-1999 09:18

CORPS OF ENGINEERS SAFETY PAYS U. S. ARMY



T. 14 N., R. 42 E., W.M.

SCALE IN FEET

500' 0 500'

LEGEND

◻	PROJECT BOUNDARY MONUMENT
— —	NORMAL POOL SHORELINE (ELEV. 638)
- - - -	NATURAL RIVER SHORELINE (APPROX.)
— · ·	PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr41.dgn
PLOTTING TIME: 08-OCT-1999 09:39
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED:
CHIEF
SUBMITTED:
CHIEF
RECOMMENDED:
CHIEF

LOWER SNAKE RIVER

LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY

REAL ESTATE OUTGRANTS

APPROVED: DATE

SCALE AS SHOWN INV. NO.

SHEET NO. 41 FILE NO.

VALUE ENGINEERING PAYS

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgoose\lga\dgn\outgrant\lsr41.dg
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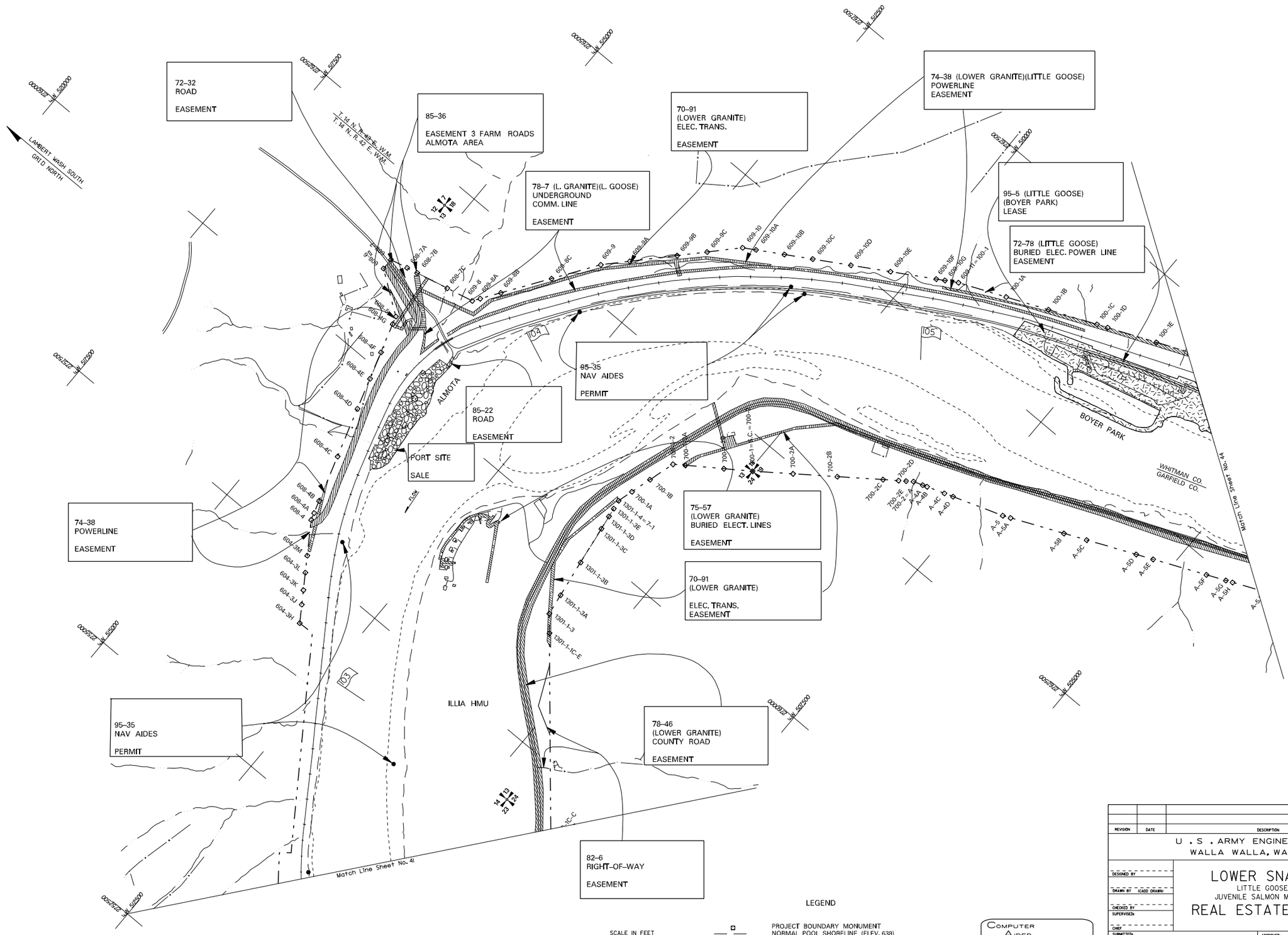

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED DATE

LOWER SNAKE RIVER
LITTLE GOOSE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 42 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgoose\lga\dgn\outgrant\lsr42.dgn
PLOTTING TIME: 18-NOV-1999 12:29
PLOTTING METHOD: PCPLOT

LEGEND

- PAVED ROADS
- IMPROVED ROADS
- MAINTAINED ROADS
- UNMAINTAINED ROADS

NOTES:

1. MAP SOURCE IS FROM U.S.C.E. PHOTOGRAMMETRIC TOPOGRAPHY DATED NOV. 1959 - DEC. 1961. LEWISTON CITY MAP DATED 1972 AND WHITMAN CO. MAP DATED 1968.
2. ROAD CLASSIFICATION DERIVED FROM WASHINGTON STATE DEPT. OF HIGHWAY MAPS DATED 1958 - 1959.
3. GRID COORDINATES ARE LAMBERT WASHINGTON (SOUTH)

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\LSR43.DGN
PLOTTING TIME: 08-OCT-1999 10:00
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U.S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISOR
CHIEF
SUBMITTED
CHIEF
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED DATE
RECOMMENDED
SCALE AS SHOWN | INV. NO.
SHEET NO. 43 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgranite\lla\dgn\outgrant\LSR43 08-OCT-1999 10:00

CORPS OF ENGINEERS

SAFETY PAYS

U. S. ARMY

95–5 (LITTLE GOOSE)
BOYER PARK
LEASE

72–78 (LITTLE GOOSE)
BURIED ELEC. POWER LINE
EASEMENT

74–38 (LITTLE GOOSE)
POWER LINE
EASEMENT

97–24 (LITTLE GOOSE)
LICENSE

95–33 (LITTLE GOOSE)
AIRSTRIP
LEASE

LAMBERT WASH. SOUTH
GRID NORTH

Motion Line Sheet No. 42

Motion Line Sheet No. 45

North Shore Access Road

WHITMAN CO.
GARFIELD CO.

106

109

FLOW

NAV LOCK

LOWER GRANITE DAM

POWERHOUSE

LOWER GRANITE FISH FACILITY HMU

Fingerling Facilities

OFFIELD CANYON PARK

TRANSMISSION LINE HMU

104–15
L/W
RESERVATION

70–91
ELEC. TRANS. AND SUBSTATION FAC.
EASEMENT

72–37
ACOUSTICAL VELOCITY METER
LTR/PERMIT

78–46
COUNTY ROAD
EASEMENT

73–78
SUBSTATION AND LINE
PERMIT

DACW68–9–84–16

86–60
ROAD
EASEMENT

T. 14 N., R. 43 E.
T. 13 N., R. 43 E.

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr44.dgn
PLOTTING TIME: 08-OCT-1999 10:21
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWING
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF
SCALE AS SHOWN
INV. NO.
SHEET NO. 44
FILE NO.

VALUE ENGINEERING PAYS

REFERENCE FILES ATTACHED

LEVELS ON FOR CONTRACT DRWGS

SCALE

G:\lgranite\lla\dgn\outgrant\lsr44.d
08-OCT-1999 10:21

97–17
PARK AND RECREATION
LEASE

72 – 73
ELEC. TRANS. LINE
PERMIT

87 – 6
ELECTRICAL LINE
EASEMENT

89–26
ACCESS ROAD
LICENSE

84 – 55
HOUSE AND LAUNCH
SITE
LEASE

84–2
COUNTY ROAD R/W
EASEMENT

104–16
L/S WATERING CORRIDOR
EASEMENT

72 – 73
ELEC. TRANS. LINE
PERMIT

104 – 18
PIPELINE
RESERVATION

WAWAWAI COUNTY PARK

WAWAWAI

WAWAWAI LANDING

COUNTY ROAD 9000

TRANSMISSION LINE HMU

WHITMAN CO.
GARFIELD CO.

Match Line Sheet No. 44

Match Line Sheet No. 46

T. 14 N., R. 43 E.
T. 13 N., R. 43 E.

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 45 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
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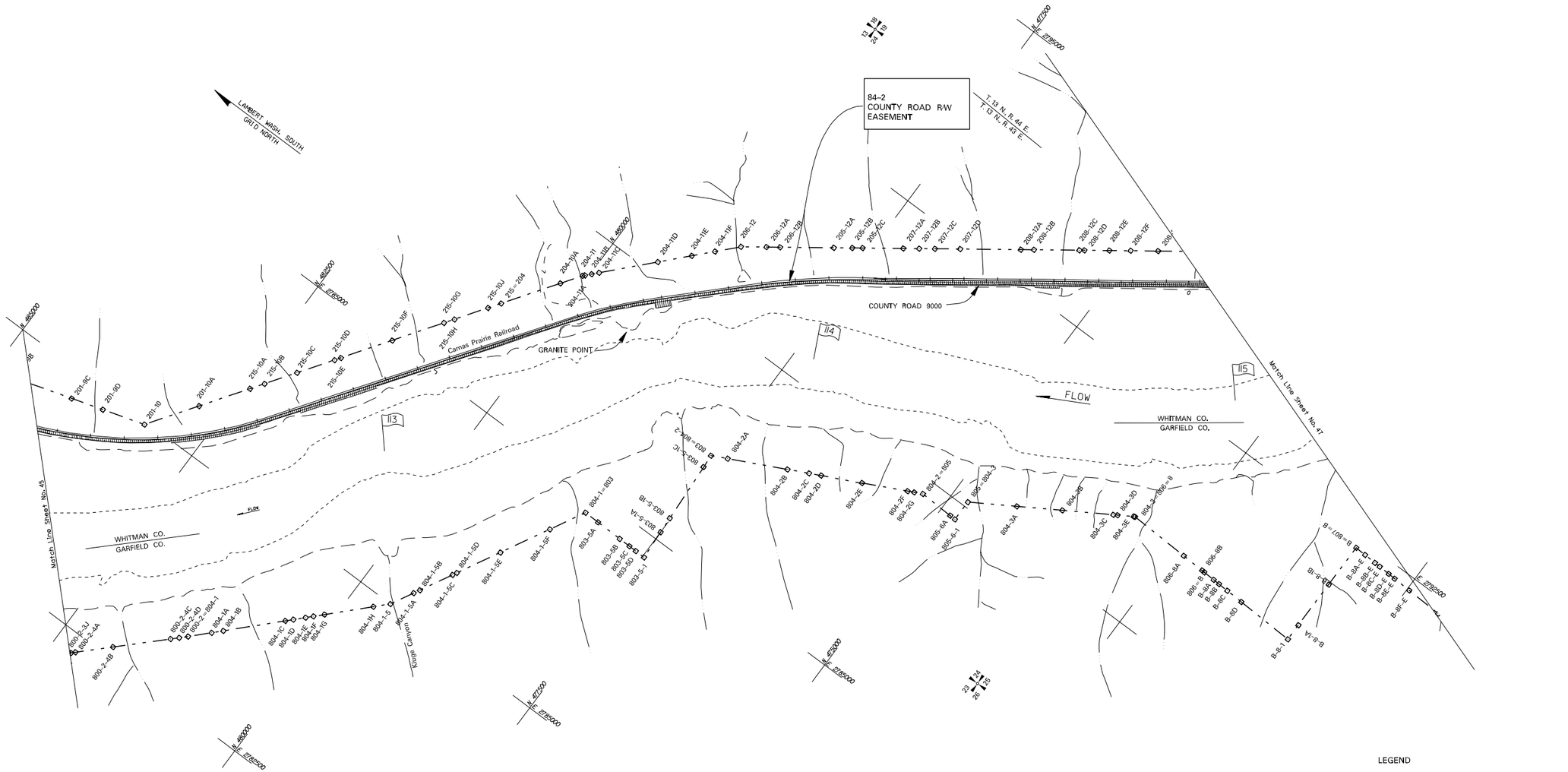

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr46.dgn
PLOTTING TIME: 08-OCT-1999 10:42
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 46 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lgranite\lla\dgn\outgrant\lsr46.d 08-OCT-1999 10:42

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 47 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr47.dgn
PLOTTING TIME: 08-OCT-1999 10:54
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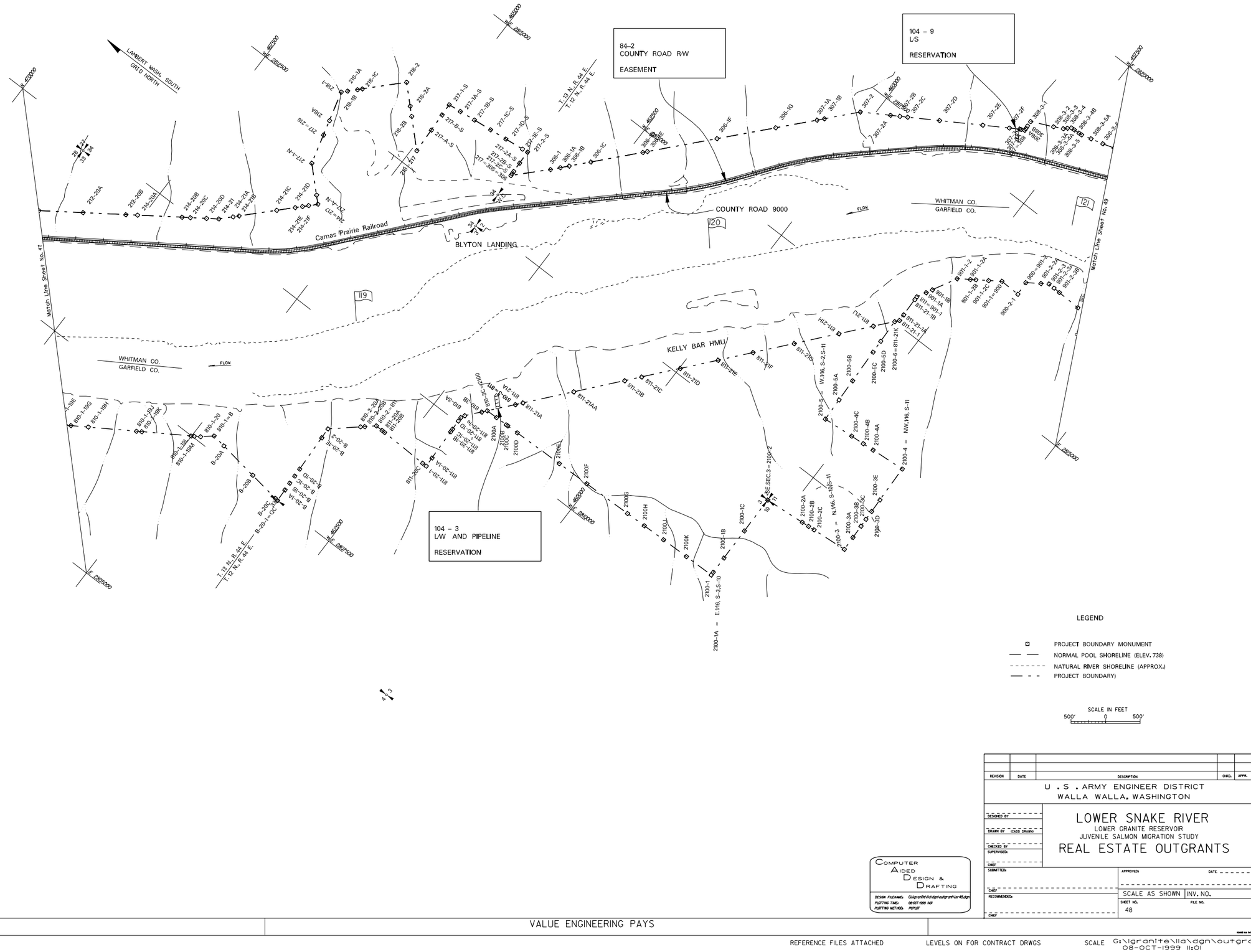
08-OCT-1999 10:54



REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

APPROVED DATE

SCALE AS SHOWN | INV. NO.
SHEET NO. 48 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
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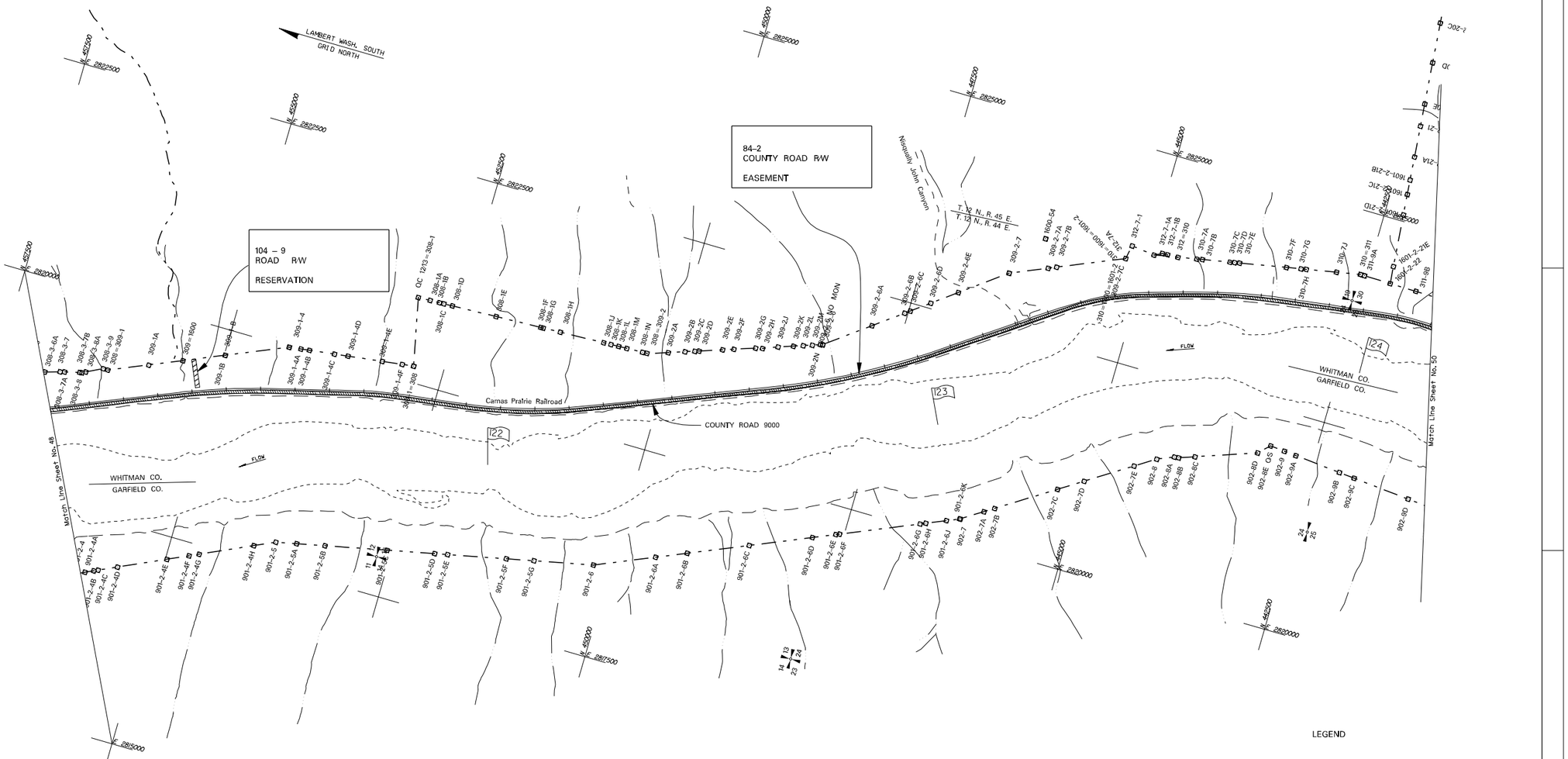
08-OCT-1999 11:01



LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 49 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
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PLOTTING METHOD: PCPLOT

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104 – 16
L/W
RESERVATION

104 – 33
ACCESS ROAD
RESERVATION

104 – 7
ACCESS ROAD
RESERVATION

84–2
COUNTY ROAD R/W
EASEMENT

84 – 17
LEASE

LAMBERT WASH, SOUTH
GRID NORTH

Match Line Sheet No. 49

Match Line Sheet No. 51

WHITMAN CO.
GARFIELD CO.

WHITMAN CO.
ASOTIN CO.

ASOTIN CO.
GARFIELD CO.

C. P. R. R.

COUNTY ROAD 9000

NISQUALLY JOHN
LANDING

W.S.R. 193

ELEV.

T. 12 N., R. 45 E.
T. 12 N., R. 44 E.

T. 11 N., R. 45 E.
T. 11 N., R. 44 E.

125 126 127 128

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\grant\lib\dgn\outgrant\isr50.dgn
PLOTTING TIME: 08-OCT-1999 12:09
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISOR
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN
INV. NO.
SHEET NO. 50
FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\grant\e\lla\dgn\outgrant\isr50.d
08-OCT-1999 12:09

CORPS OF ENGINEERS | SAFETY PAYS | U. S. ARMY

104 – 12
L/W
RESERVATION

84 – 50
RIVER MILES 128 – 137
EASEMENT S.R. 193

78 – 13
ROAD R/W
EASEMENT

77 – 9
STOCK CROSSING
EASEMENT

90–25
UNDERGROUND COMMUN. LINE
EASEMENT

77 – 4
ELEC. DIST. LINE
EASEMENT

81–14
UNDERGROUND COMMUN. LINE
LICENSE

78 – 23
CHIEF TIMOTHY STATE PARK
LEASE

BURIED CABLE
LTR. PERMIT, 8 SEP 76

95–18
ROAD ACCESS
EASEMENT

69 –150
SR –12
EASEMENT

76 – 40
ROAD R/W
EASEMENT

93–16
R/W ELECTRICAL LINE
EASEMENT

POWER LINE
82 – 39
EASEMENT

76 – 15
R/W FOR ROAD
EASMENT

LAMBERT WASH. SOUTH
GRID NORTH

Match Line Sheet No. 52

Match Line Sheet No. 50

CHIEF TIMOTHY STATE PARK

WHITMAN CO.
ASOTIN CO.

FLOW

C. P. R. R.

W.S.R. 193

MOSES HMU

SILCOTT HMU

T. 11 N., R. 45 E.

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN | INV. NO.
SHEET NO. 51 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
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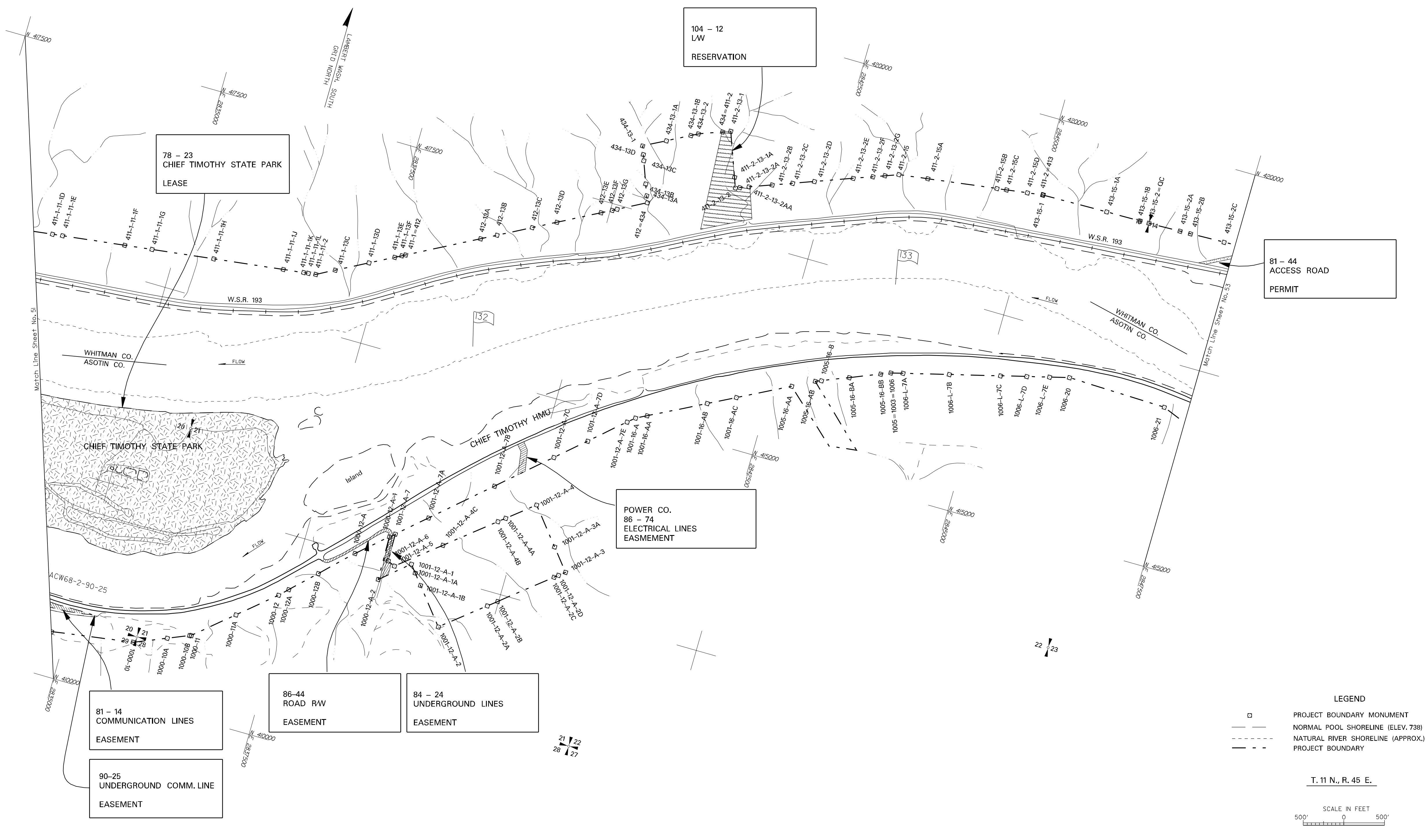
PLOTTING TIME: 08-OCT-1999 12:20
PLOTTING METHOD: PCPLOT

VALUE ENGINEERING PAYS

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\granite\lib\dgn\outgrant\lsr51.dgn 08-OCT-1999 12:20



REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

LOWER SNAKE RIVER

LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY

REAL ESTATE OUTGRANTS

DESIGNED BY:
DRAWN BY: (CADD DRAWN)
CHECKED BY:
SUPERVISED:
CHIEF
SUBMITTED:
APPROVED: DATE
CHIEF
RECOMMENDED:
CHIEF

SCALE AS SHOWN | INV. NO.
SHEET NO. 52 | FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\granite\lla\dgn\outgrant\lsr52.dgn
PLOTTING TIME: 08-OCT-1999 12:28
PLOTTING METHOD: PCPLOT

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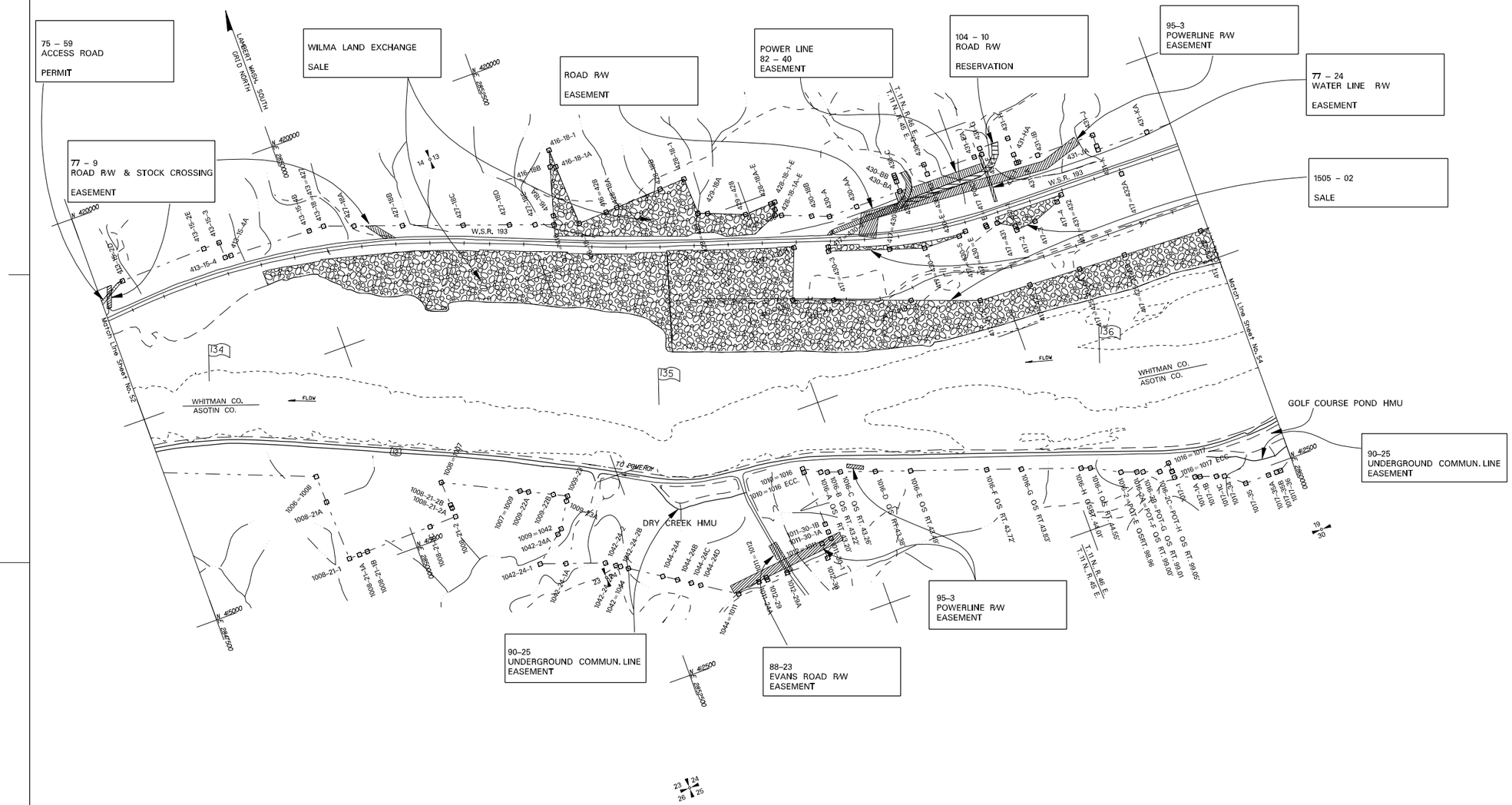
08-OCT-1999 12:28



LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

SCALE IN FEET
500′ 0 500′

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\granite\lla\dgn\outgrant\lsr53.dgn
PLOTTING TIME: 08-OCT-1999 12:54
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

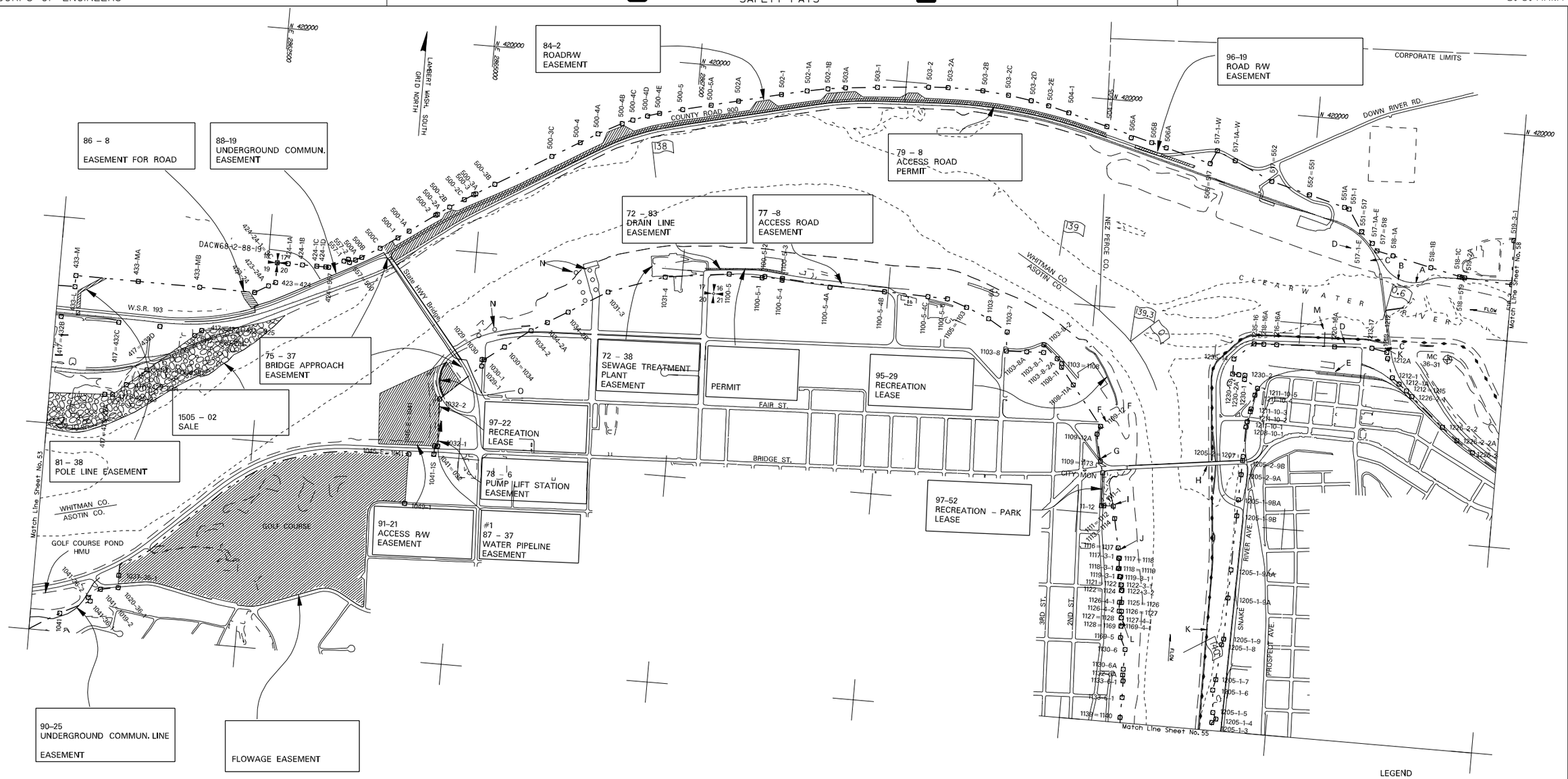
U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 53 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\granite\lla\dgn\outgrant\lsr53.d
08-OCT-1999 12:54



LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY
- LEVEE

T. 35 & 36 N.; R 6 W. IDAHO
T. 11 N.; R. 46 E. WASHINGTON

SCALE IN FEET
500' 0 500'

OUTGRANT LEGEND

- A 80–23 EASEMENT WATER PIPELINE.
- B 79–14 EASEMENT RAILROAD SPUR LINE.
- C 80–19 EASEMENT ELECTRICAL LINE.
- D 82–3 EASEMENT GAS LINE.
- E 76–6 EASEMENT SEWER LINE. 82–33 DISCHARGE LINE.
- F 87–34 EASEMENT DRAIN PIPE.
- G 87–35 EASEMENT ROAD.
- H 97–27 LICENSE FISH WEIR.
- I 96–01 LANDSCAPING LICENSE
- J 76–26 EASEMENT SEWER LINE.
- K 80–10 EASEMENT COMMUNICATION LINES.
- L 80–9 COMM. EASEMENT
- M 82–33 EASEMENT DISCHARGE LINE.
- N 27 MAY 1975 PERMIT POLELINE.
- O 90–25 EASEMENT UNDERGROUND COMMUN. LINE.

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr54.dgn
PLOTTING TIME: 18-NOV-1999 13:00
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED DATE
RECOMMENDED
CHIEF

SCALE AS SHOWN | INV. NO.
SHEET NO. 54 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgranite\lla\dgn\outgrant\lsr54.d
18-NOV-1999 13:00

OUTGRANT LEGEND

- A 80–20 EASEMENT UTILITIES.
- B 80–10 COMM. EASEMENT.
- C 80–19 EASEMENT SUBSTATION & LINE
- D 82–3 EASEMENT GAS LINE.
- E 97–81 LEASE SOUTHWAY LANDING.
- F 78–49 EASEMENT COUNTY ROADS
- G 80–15 EASEMENT BRIDGE APPROACH
- H 81–19 EASEMENT ELECTRIC LINE.
- I 81–22 EASEMENT GAS LINE.
- J 80–8 EASEMENT BRIDGE APPROACH.
- K 80–48 EASEMENT UNDERGROUND LINE.
- L 95–19 EASEMENT SEWER.
- M 83–26 EASEMENT R/W.
- N 97–30 EASEMENT GAS LINE.
- O 89–23 PERMIT RECREATION PUBLIC PARK.

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV. 738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY
- LEVEES

SCALE IN FEET
500′ 0 500′

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISOR
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN
INV. NO.
SHEET NO. 55
FILE NO.

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr55.dgn
PLOTTING TIME: 08-OCT-1999 13:24
PLOTTING METHOD: PCPLOT

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgranite\lla\dgn\outgrant\lsr55.c
08-OCT-1999 13:24

81–21
COMM. LINES.
EASEMENT

79–18
ROAD EASEMENT
RD. 505.

75–25
RECREATION
LEASE
CONCESSION
HGSP.

88–21
R/W
EASEMENT

80–9
COMMUNICATION LINE
EASEMENT

80–18
ELEC. LINE
EASEMENT

79–13
SEWER LINE & PLANT
EASEMENT

96–15
LOOKINGGLASS PARK
LEASE

80–18
ELECTRICAL LINE
EASEMENT

97–52
UNDERGROUND COMMUN. LINE
EASEMENT

73–119
STORM DRAIN
EASEMENT

97–32
CHANNEL R/W
EASEMENT

TAMMANY QUARRY

HELLS GATE HMU

CRITCHFIELD QUARRY

HELLS GATE STATE PARK

CHIEF LOOKING GLASS PARK

LAMBERT WASH. SOUTH
GRID NORTH

Match Line Sheet No. 55

NEZ PERCE CO.
ASOTIN CO.

COUNTY ROAD 505

IDAHO
WASHINGTON

STATE HIGHWAY 129

1ST & HARDING

MADISON & 1ST

MONROE & 1ST

FILMORE & 1ST

BAUMEISTER & SECOND

Match Line Sheet No. 57

E116 COR
24
25

T. 35 N.; R. 6 W. IDAHO
T. 10 N.; R. 46 E. WASH.

SCALE IN FEET
500′ 0 500′

LEGEND
PROJECT BOUNDARY MONUMENT
NORMAL POOL SHORELINE (ELEV. 738)
NATURAL RIVER SHORELINE (APPROX.)
PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\granite\lla\dgn\outgrant\lsr56.dgn
PLOTTING TIME: 08-OCT-1999 13:43
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

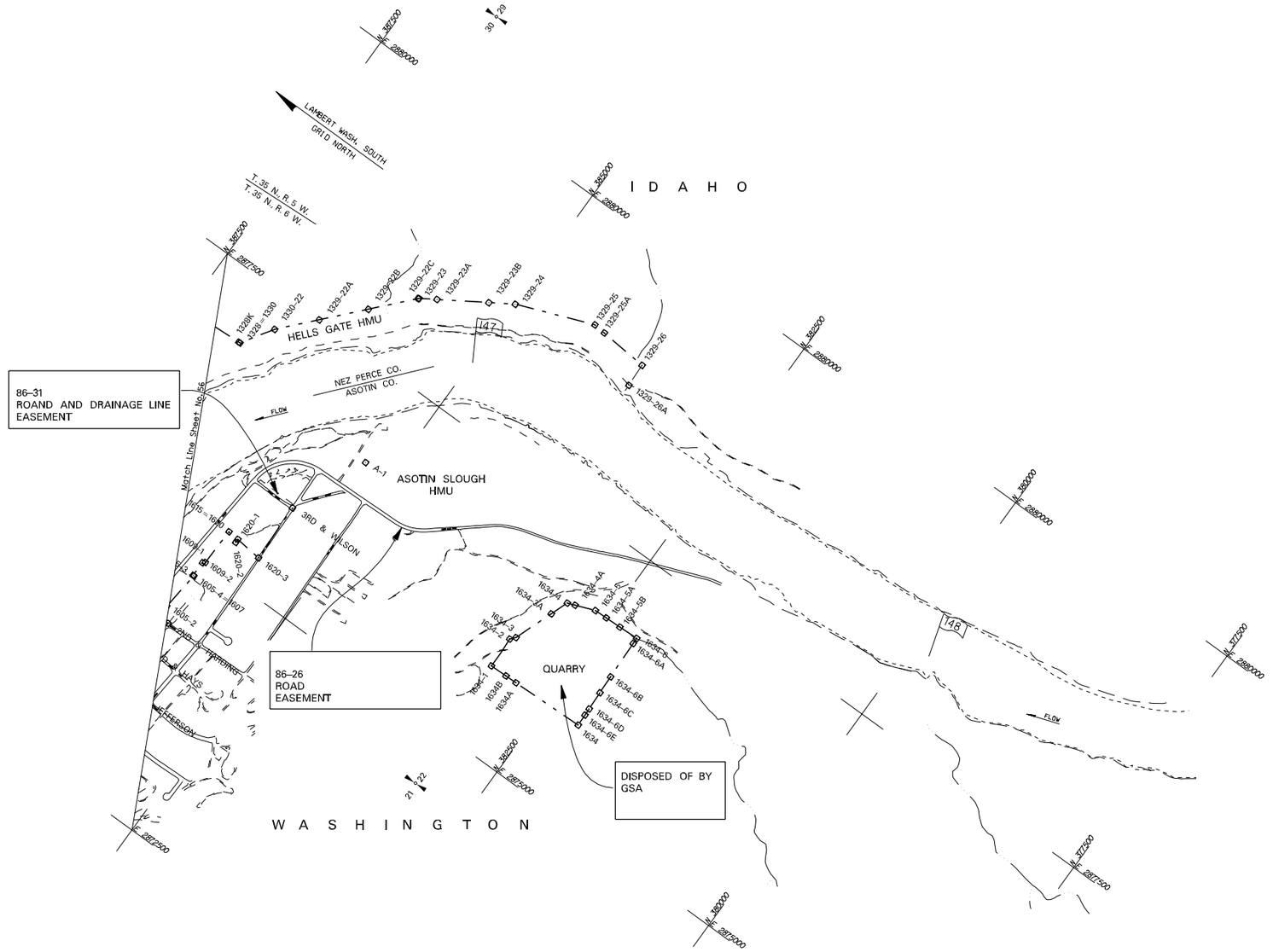
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAFTG
CHECKED BY SUPERVISOR
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE
SCALE AS SHOWN
INV. NO.
SHEET NO. 56
FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\granite\lla\dgn\outgrant\lsr56.d
08-OCT-1999 13:43



T. 35 N., R. 5 & 6 W. IDAHO
T. 10 N., R. 46 E. WASH.

SCALE IN FEET
500' 0 500'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV.738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\granite\lla\dgn\outgrant\lsr57.dgn
PLOTTING TIME: 18-NOV-1999 13:12
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

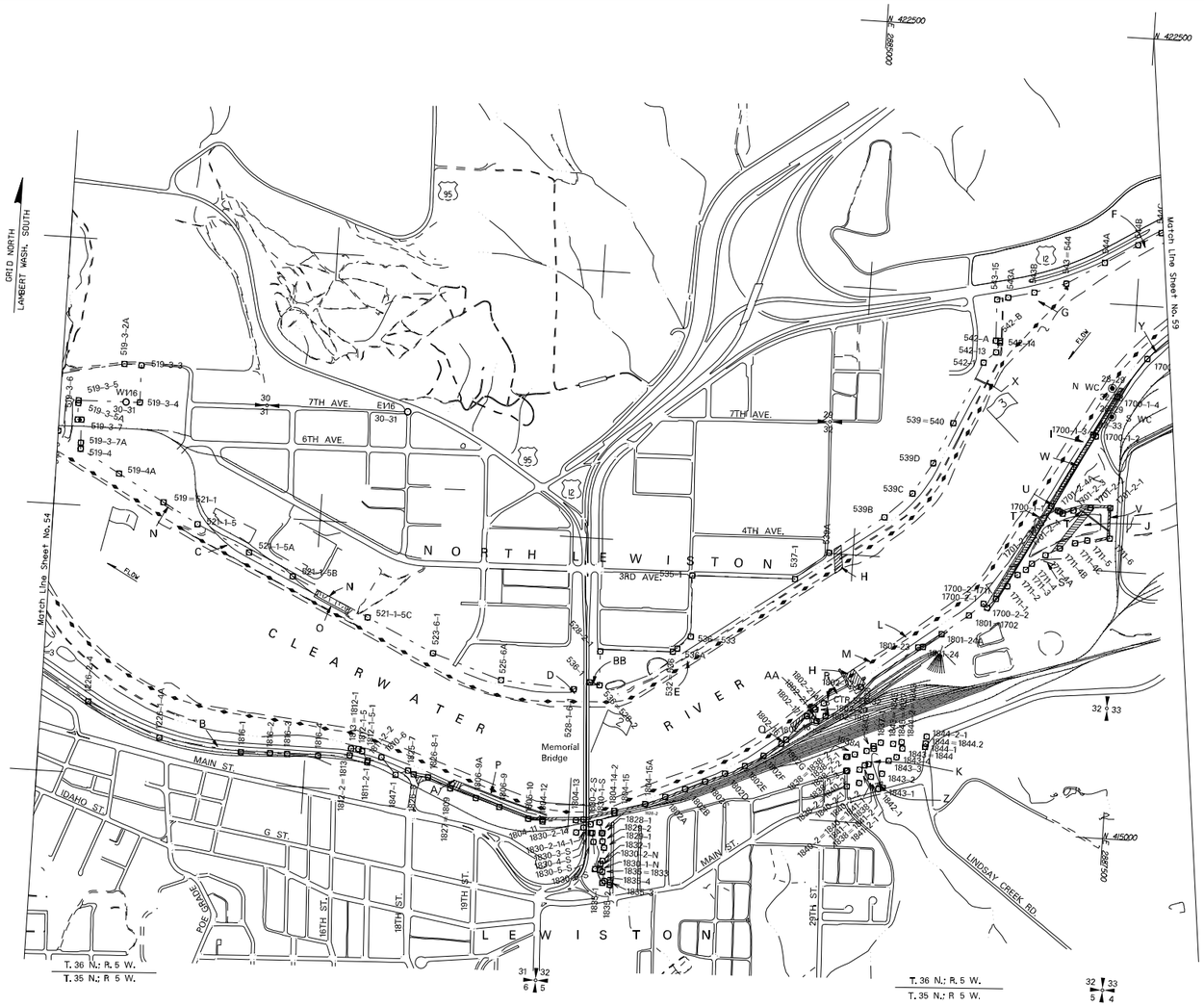
U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY (CADD DRAWN)
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 57 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\granite\lla\dgn\outgrant\lsr57.dgn 18-NOV-1999 13:12



OUTGRANT LEGEND

A	91–24	EASEMENT ROAD.
B	76–23	TRUCK BYBASS.
C	75–39	EASEMENT UTILITIES AND LINES.
D	86–54	EASEMENT ROAD.
E	78–5	CLEARWATER PARK RECREATION LEASE.
F	79–21	EASEMENT PUMPING PLANT & LINE.
G	97–81	RECREATION LEASE CLEARWATER LANDING.
H	82–3	EASEMENT GAS LINE.
I	80–19	EASEMENT ELECTRIC LINE.
J	74–31	EASEMENT POWERLINE.
K	76–16; 81–12	EASEMENT SEWAGE LINE & OUTFALL.
L	83–2	EASEMENT WATER LINE.
M	84–65	ROAD EASEMENT.
N	96–44	LEASE.
O	92–13	EASEMENT WATER PIPELINE.
P	97–31	EASEMENT ROAD R/W.
Q	74–30	EASEMENT PIPELINE.
R	90–13	EASEMENT SLUDGE DRYING BASIN R/W
S	90–9	EASEMENT PIPELINE.
T	91–35	EASEMENT METEOROLOGICAL TOWERS
U	22 MARCH 1976	PERMIT.
V	74–30	EASEMENT PIPELINE.
W	93–1	LEASE.
X	85–50	EASEMENT STORM PIPE.
Y	88–25	EASEMENT PIPELINE.
Z	97–17	EASEMENT WATER PIPELINE.
AA	96–36	LEASE WATER TREATMENT BLDG.
BB		EASEMENT COMMUNICATION LINE.

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (ELEV.738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY
- LEVEE

NEZ PERCE CO.

SCALE IN FEET
500' 0 500'

COMPUTER AIDED DESIGN & DRAFTING
DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr58.dgn
PLOTTING TIME: 08-OCT-1999 14:10
PLOTTING METHOD: PDPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

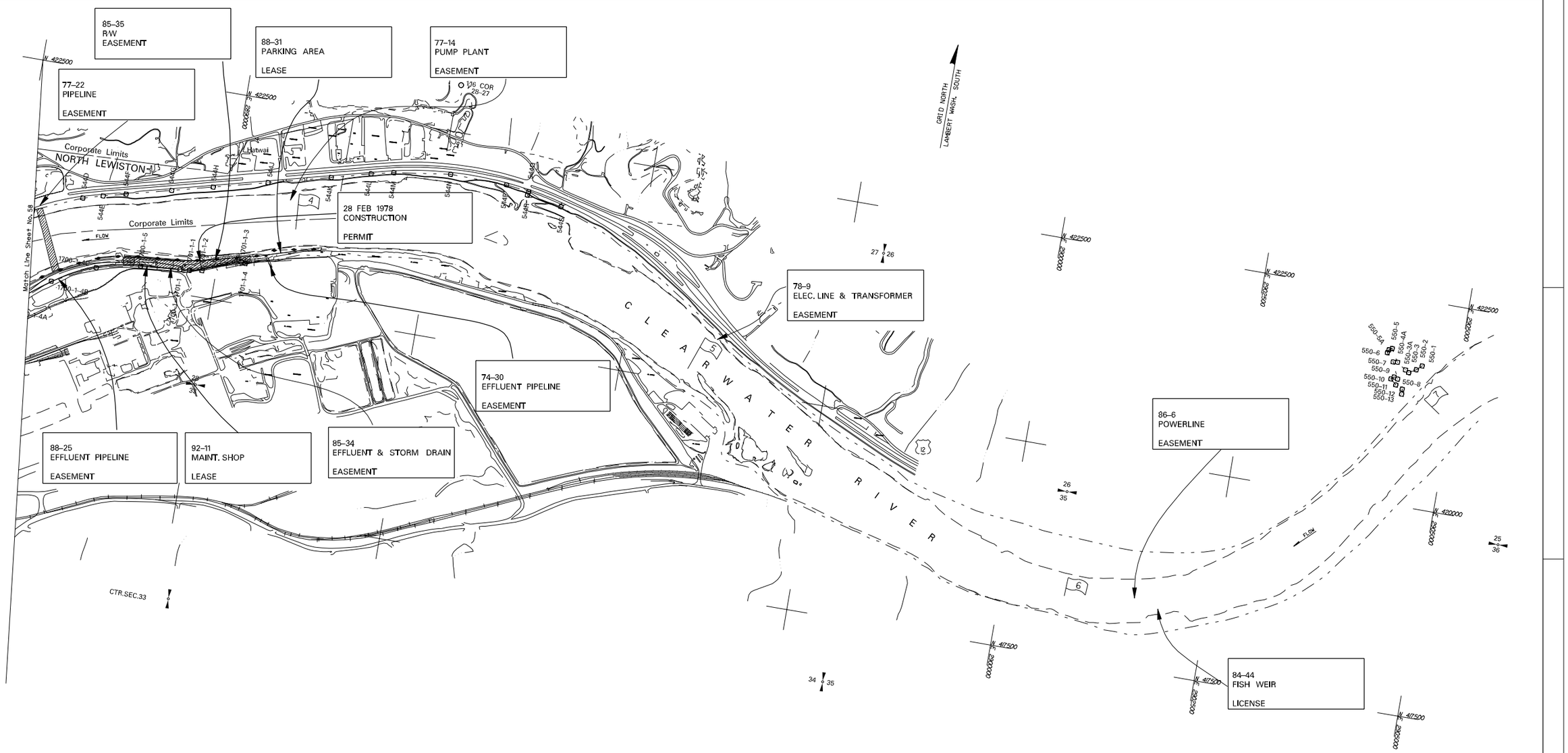
U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWING
CHECKED BY
SUPERVISED
CHIEF

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SUBMITTED
CHIEF
APPROVED
DATE
RECOMMENDED
CHIEF
SCALE AS SHOWN | INV. NO.
SHEET NO. 58 | FILE NO.

REFERENCE FILES ATTACHED | LEVELS ON FOR CONTRACT DRWGS | SCALE | G:\lgranite\lla\dgn\outgrant\lsr58.d 08-OCT-1999 14:10



NEZ PERCE CO.
T. 36 N.; R. 5 W.

SCALE IN FEET
10' 0 10'

LEGEND

- PROJECT BOUNDARY MONUMENT
- NORMAL POOL SHORELINE (elev.738)
- NATURAL RIVER SHORELINE (APPROX.)
- PROJECT BOUNDARY
- LEVEE

COMPUTER AIDED DESIGN & DRAFTING

DESIGN FILENAME: G:\lgranite\lla\dgn\outgrant\lsr59.dgn
PLOTTING TIME: 18-NOV-1999 13:23
PLOTTING METHOD: PCPLOT

REVISION	DATE	DESCRIPTION	CHKD.	APPR.

U . S . ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

DESIGNED BY
DRAWN BY ICADD DRAWN
CHECKED BY
SUPERVISED
CHIEF
SUBMITTED
CHIEF
RECOMMENDED
CHIEF
APPROVED
DATE

LOWER SNAKE RIVER
LOWER GRANITE RESERVOIR
JUVENILE SALMON MIGRATION STUDY
REAL ESTATE OUTGRANTS

SCALE AS SHOWN | INV. NO.
SHEET NO. 59 | FILE NO.

REFERENCE FILES ATTACHED LEVELS ON FOR CONTRACT DRWGS SCALE G:\lgranite\lla\dgn\outgrant\lsr59.dgn 18-NOV-1999 13:23